ORDER NO. MD9902025C2

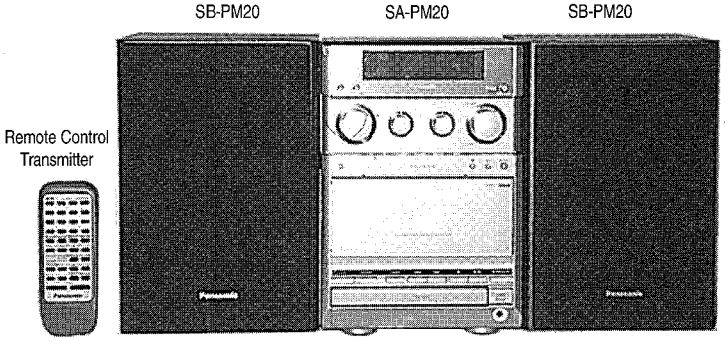
Service Manual

CD Stereo System

SA-PM20

COMPACT disc DIGITAL AUDIO

MASH* multi-stage noise shaping



Colour

(S) . . . Silver Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe	(S)
(EB)	Great Britain	
(EG)	Germany	

System : SC-PM20

Main Unit	SA-PM20
Speakers	SB-PM20

MASH is a trademark of NTT.

TAPE DECK : AR2 Mechanism Series
TRAVERSE DECK : RAE0152Z-M Mechanism Series

■ Specifications

■ AMPLIFIER SECTION

RMS power output
THD 10%, both channels driven
LOW 14 W per channel (6Ω)
HIGH 6 W per channel (6Ω)
Total BI-AMP power 20 W per channel
Input sensitivity
AUX 250 mV
Input impedance
AUX 47 kΩ
Output impedance
Headphone 16 - 32 Ω

■ AM TUNER SECTION

Frequency range 522 — 1629 kHz (9 kHz steps)
Sensitivty S/N 20 dB 500 µV/m

■ FM TUNER SECTION

Frequency range 87.50 — 108.00 MHz (0.05 MHz steps)
Sensitivty 1.8 µV (IHF)
S/N 26 dB 1.5 µV
Antenna terminal(s) 75Ω (unbalanced)

■ CASSETTE DECK SECTION

Track system 4 track, 2 channel
Heads
Record/playback Solid permalloy head
Erasure Double gap ferrite head
Motor DC servo motor
Recording system AC bias 100 kHz
Erasing system AC erase 100 kHz
Tape speed 4.8 cm/s
Overall frequency response (–3,+3 dB at DECK OUT)
NORMAL (TYPE I) 50 Hz – 13 kHz
HIGH (TYPE II) 50 Hz – 13 kHz
S/N 50 dB (A weighted)
Wow and flutter 0.18% (WRMS)
Fast forward and rewind times Approx. 120 seconds with C-60 cassette tape

■ CD SECTION

Sampling frequency 44.1 kHz
Decording 16 bit linear
Beam source/wave length Semiconductor laser / 780 nm
Number of channels 2 channel stereo
S/N
SP OUT 82 dB (JIS.A)
Wow and flutter Below measurable limit
Digital filter 8 fs
DA converter MASH (1 bit DAC)

■ General

Power consumption * 62 W (Standby mode: 0.7 W)
Power supply [E/EG] AC 220-230 V, 50 Hz
[EB] AC 230-240 V, 50 Hz
Dimensions (W x H x D) 195 x 286 x 292 mm
Weight 5.0 kg

Notes :
1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

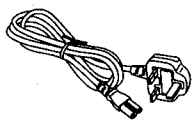
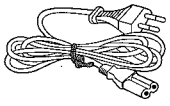
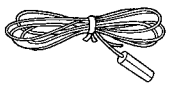
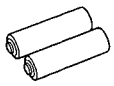
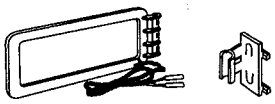
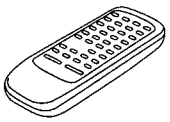
Panasonic®

© 1999 Matsushita Electronics (S) Pte. Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

■ Contents

	PAGE
• ACCESSORIES	2
• BEFORE REPAIR AND ADJUSTMENT	2
• PROTECTION CIRCUITRY	2
• HANDLE PRECAUTIONS FOR TRAVERSE DECK	3
• PRECAUTION OF LASER DIODE	3
• CAUTION FOR AC MAINS LEAD	4
• CONNECTIONS	5
• FRONT PANEL CONTROL	6
• LISTENING TO CDS & RECORDING	7 ~ 10
• USING THE TIMER	11 ~ 12
• OPERATION CHECKS	13 ~ 18
• TERMINAL GUIDE OF IC's TRANSISTORS AND DIODES	19
• TERMINAL FUNCTION OF IC's	20 ~ 22
• BLOCK DIAGRAM	23 ~ 27
• SCHEMATIC DIAGRAM	28 ~ 32
• PRINTED CIRCUIT BOARD	33 ~ 39
• WIRING CONNECTION DIAGRAM	40 ~ 41
• TROUBLESHOOTING GUIDE	42
• MECHANISM PARTS LOCATION	43
• LOADING UNIT PARTS LOCATION	44
• CABINET PARTS LOCATIONS	45 ~ 46
• REPLACEMENT PARTS LIST	47 ~ 50
• RESISTORS & CAPACITORS	51 ~ 54
• PACKING MATERIALS & ACCESSORIES	55
• PACKAGING	55

■ Accessories

 AC power cord ..... (for United Kingdom)	 AC power cord ..... (for others)	 FM indoor antenna	 Batteries
 AM loop antenna set	Antenna plug adaptor ... (for United Kingdom)	 Remote control transmitter	

■ Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitor C628 through a 10Ω , 10W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at AC 230V - 240V, 50 Hz in NO SIGNAL mode should be ~200mA.

■ Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.
If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body. So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

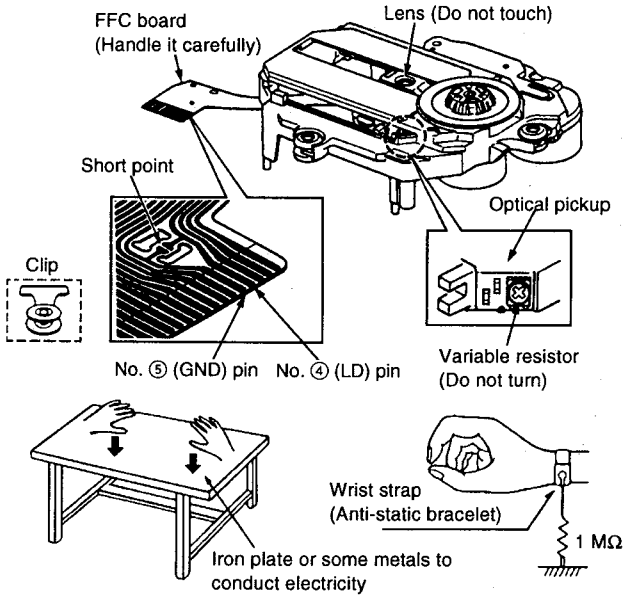
- **Handling of traverse deck (optical pickup)**

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. The short land between the No.4 (LD) and No.5 (GND) pins on the flexible boards (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
   To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

- **Grounding for electrostatic breakdown prevention**

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conducive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ Precaution of Laser Diode

CAUTION: This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens.

Wavelength: 780 nm
Maximum output radiation power from pick up: 100μW/VDE

Laser radiation from pick up unit is safety level, but be sure the followings:

1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge : 780nm
Maximale strahlungsleistung der lasereinheit : 100μ W/VDE

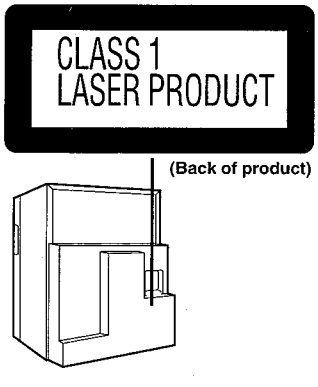
Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werkseitig justierten einstellregler der lasereinhit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

ADVARSEL: **I dette a apparat anvendes laser.**

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Use of Caution Labels



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden at apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÅR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

■ Caution for AC Mains Lead

(For "EB" area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION !
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

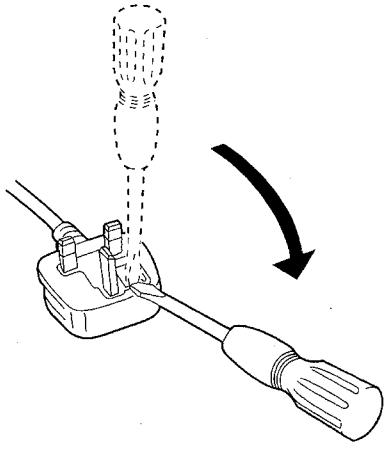
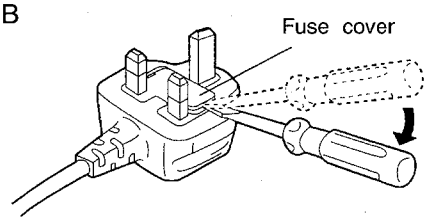


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

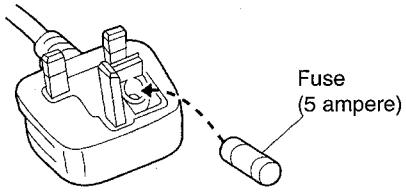
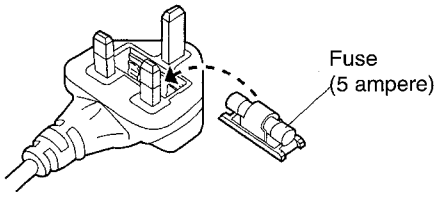
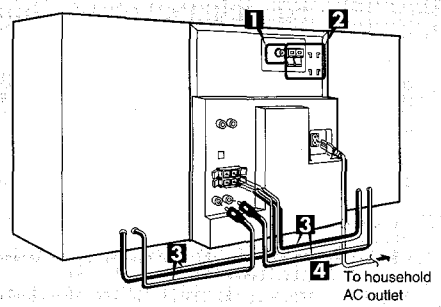
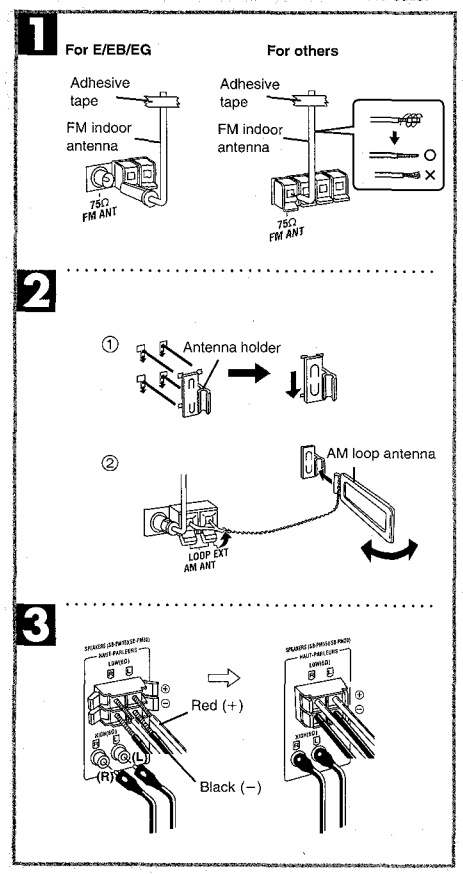


Figure B



■ CONNECTIONS





Connections

- Plug the AC power cord into a household AC outlet only after all other connections have been made.
- To prepare the AM loop antenna wire and speaker cords, twist the vinyl cover tip and pull off.
- For your listening pleasure, keep your speakers from touching the system.
- These speakers are designed identically so that no left or right channel orientation is necessary.
- You can take the front net off these speakers.

1 Connect the FM indoor antenna.

Tape the antenna to a wall or column, in a position where radio signals are received with the least amount of interference.

Note

For best reception :
An FM outdoor antenna is recommended.

2 Connect the AM loop antenna.

After attaching the antenna, turn on the system and tune in a broadcast station. Then, turn the antenna to the angle of best reception and least interference.

3 ① Connect the right (R) and left (L) speaker cords (pin type). ② Connect the right (R) and left (L) speaker cables.

Note

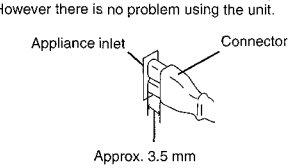
- To prevent damage to circuitry, never short-circuit positive (+) and negative (–) speaker wires.
- Be sure to connect only positive (red) wires to positive (+) terminals and negative (black) wires to negative (–) terminals.

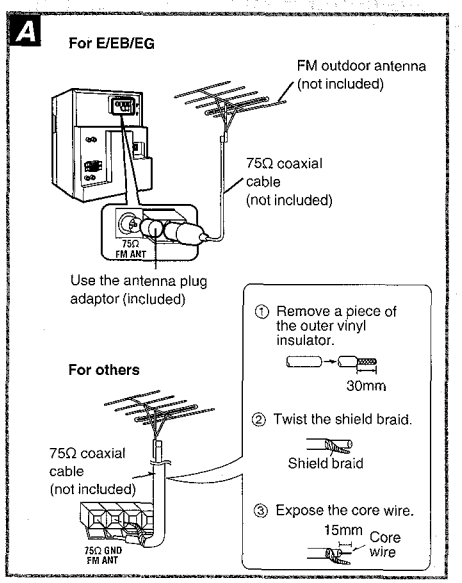
Caution
Use the speakers only with the recommended system.
Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire.
Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.

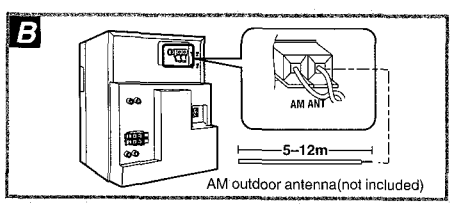
4 Connect the AC power cord.

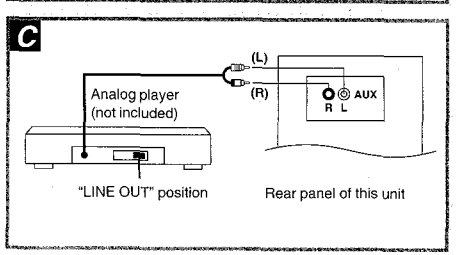
BE SURE TO READ THE CAUTION FOR AC MAINS LEAD ON PAGE 4 BEFORE CONNECTION.

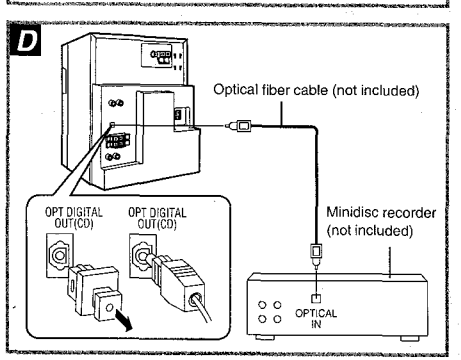
Insertion of Connector
Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.











Optional antenna connections

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

FM outdoor antenna A

Disconnect the FM indoor antenna if an FM outdoor antenna is installed.

Note
An outdoor antenna should be installed by a qualified technician only.

AM outdoor antenna B

Connect the outdoor antenna without removing the AM loop antenna. Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.

Note
When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

External unit connection

- Make sure that the power supply for all components has been turned off before making any connections.
- For details, refer to the operating instructions of the unit which are to be connected.
- All peripheral components and cables sold separately.

Connecting analog equipment C

This example shows how to connect an analog player with a PHONO OUT/LINE OUT switch.
When units other than those described are to be connected, please consult your audio dealer.

Note
- Only an analog player with a built-in phono equalizer can be connected.
- Set the switch to the "LINE OUT" position at the back of the analog player.

Connecting digital equipment to the optical fiber out terminal D

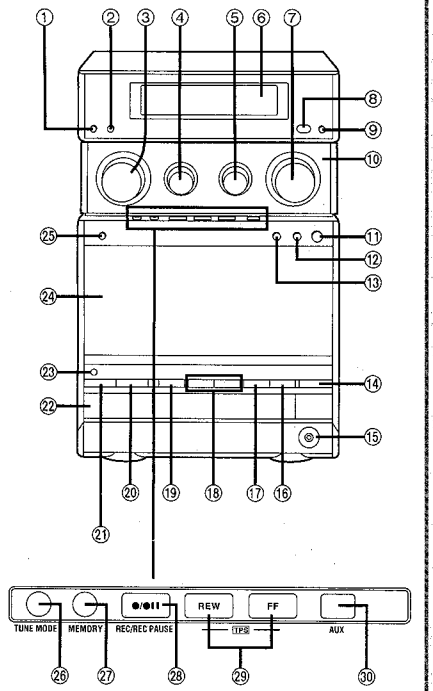
Remove the dust-protection cap and connect an optical fiber cable (not included) to the optical input terminal of the minidisc recorder.

Note
When this terminal is not being used, attach the cap.

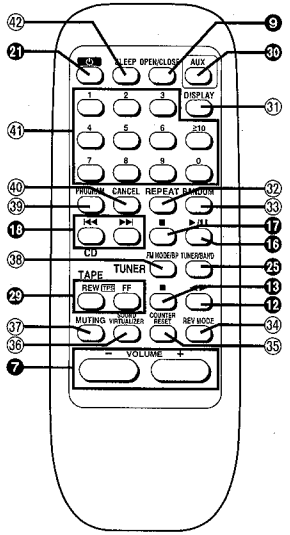
FRONT PANEL CONTROL

Front panel controls

A



B



Main unit

A

Number Name

① Play timer/recording timer button (◴ PLAY/◴ REC)
② Clock/timer button (CLOCK/TIMER)
③ Tune/time adjust control (TUNE/TIME ADJ)
④ Bass control (BASS)
⑤ Treble control (TREBLE)
⑥ Display
⑦ Volume control (VOLUME)
⑧ Remote control signal sensor
⑨ Glide panel open/close button (OPEN/CLOSE)
⑩ Glide panel
⑪ Cassette holder open button (⏏ OPEN)
⑫ Cassette play/direction button (◀ ▶)
⑬ Cassette stop button (■)
⑭ CD tray open/close button (⏏ OPEN/CLOSE)
⑮ Headphone jack (🎧)
⑯ CD play/pause button (▶/❚❚)
⑰ CD stop button (■)
⑱ Skip/search buttons (|◀◀ ▶▶|)
⑲ CD edit button (CD EDIT)
⑳ Auto power-off button (AUTO OFF)
㉑ Standby/on switch (⏻/I)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
㉒ CD tray
㉓ AC supply indicator (AC IN)
This indicator lights when the unit is connected to the AC mains supply.
㉔ Cassette holder
㉕ Tuner/band select button (TUNER/BAND)
㉖ Tuning mode select button (TUNE MODE)
㉗ Memory button (MEMORY)
㉘ Record/record pause button (●/● ❚❚ REC/REC PAUSE)
㉙ Fast forward/rewind/tape program sensor buttons (TPS REW FF)
㉚ AUX button (AUX)

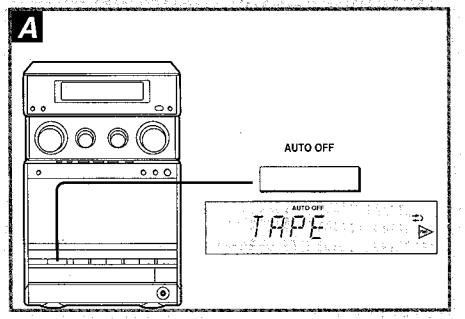
Remote control

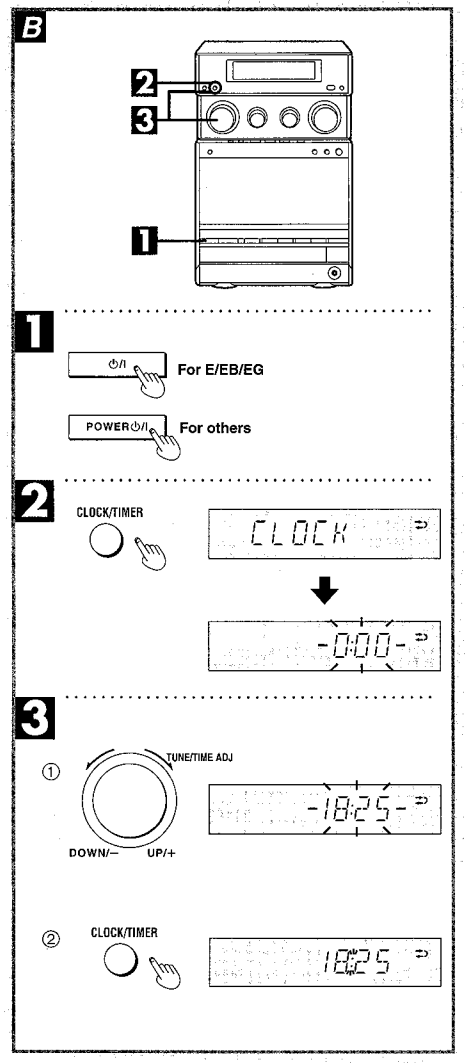
B

Buttons such as ⑦ function in exactly same way as the buttons on the main unit.

Number Name

㉛ Display select button (DISPLAY)
㉜ Repeat button (REPEAT)
㉝ Random play button (RANDOM)
㉞ Reverse mode select button (REV MODE)
㉟ Tape counter reset button (COUNTER RESET)
㊱ Sound virtualizer button (SOUND VIRTUALIZER)
㊲ Muting button (MUTING)
㊳ FM mode/BP button (FM MODE/BP)
㊴ Program button (PROGRAM)
㊵ Cancel button (CANCEL)
㊶ Numeric buttons
㊷ Sleep timer button (SLEEP)





Auto power-off A

When CD or tape is selected as the source.
To save power the unit turns off if it is left unused for four minutes.

Note
This function does not work if the source is tuner or AUX.

Press [AUTO OFF].
"AUTO OFF" is shown on the display.

To cancel
Press [AUTO OFF] again to clear "AUTO OFF" from the display.

For your reference
The setting is maintained even if the unit is turned off. When the unit is turned on again, "AUTO OFF" is displayed and the unit functions as described above.
"AUTO OFF" disappears from the display if either tuner or AUX is selected as the source but continues to function normally.
"AUTO OFF" remains displayed if CD or tape is selected as the source.

Setting the time B

This is a 24-hour display clock.
This example in the figure shows how to set the time for 18:25.

1 Press [⏻/I] to turn the unit on.
The glide panel retracts enabling access to the operation buttons.

2 Press [CLOCK/TIMER] to select "CLOCK".
Every time you press the button;

CLOCK→◴ PLAY→◴ REC
↑—Previous display←┘

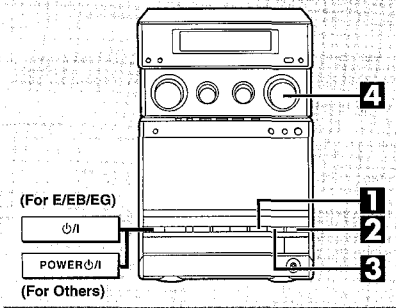
3 ① (within 7 seconds or so)
Turn [TUNE/TIME ADJ] to the right or left to show the present time.
② **Press [CLOCK/TIMER] to finish setting the time.**

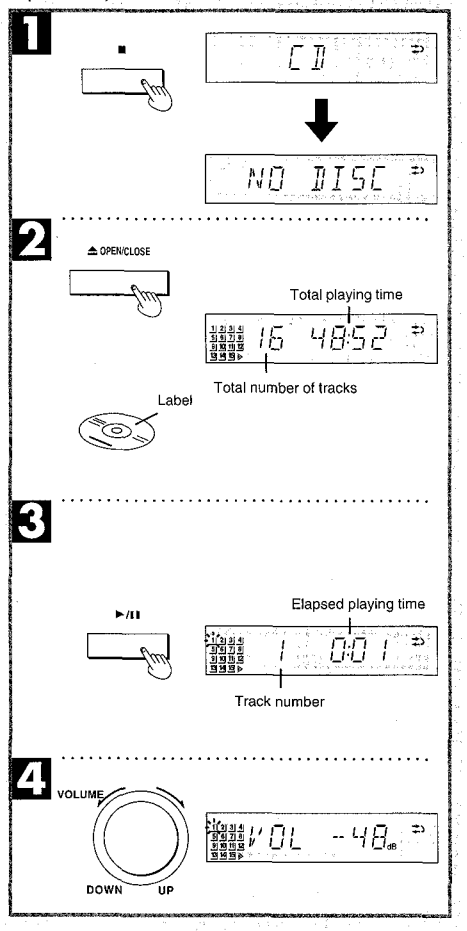
The display will return to the previous display setting after about 4 seconds.

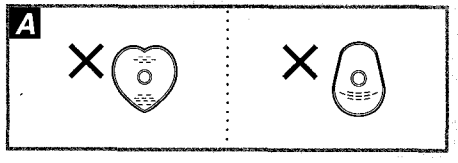
To display the time
- **To check**
  Press [CLOCK/TIMER] to select "CLOCK".
  The time will be displayed for about 5 seconds and then the display will return to whatever was previously displayed.
- **To display the time continuously** by remote control only
  Press [DISPLAY] to select present time.
  Every time you press the button:
  Present time——→Tape counter
  ↑————Previous display←————┘

For your reference
If the time has been set, the display will default to present time when in standby mode.

LISTENING TO CDS & RECORDING







Listening to CDs

Normal play

Preparations
Press [⏻/I].
The glide panel retracts enabling access to the operation buttons.

1 Press [■] to select the CD mode.

2 Press [≜ OPEN/CLOSE] to open the CD tray.
Insert the CD with label facing upward.

Press [≜ OPEN/CLOSE] to close the CD tray.
Total number of tracks and total playing time will appear on the display.

3 Press [▶/II].
Play will start from the first track on the CD.
Play will stop automatically when the last track on the CD finishes playing.

4 Adjust the volume .

To stop the CD
Press [■].

To pause	Press [▶/II] during playback. To resume playback, press [▶/II].
To search forward/ backward	Hold down [I◀◀] (backward) or [▶▶I] (forward) during playback.
To skip forward/ backward	Press [I◀◀] (backward) or [▶▶I] (forward) during playback.

To select a track with the remote control
Press the numeric button(s) to select the desired track.
To select a two-digit track
Press [≥10] and then the two numbers you want.
For example
Track no. 20: [≥10]→[2]→[0]
Track no. 35: [≥10]→[3]→[5]

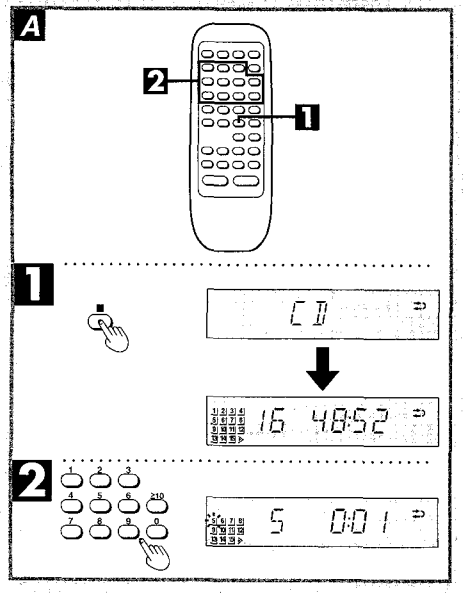
When " ⩾ " appears on the display
It indicates there are 16 or more tracks on the CD.

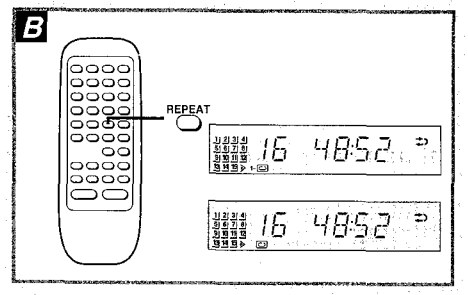
Note
- During random play (➡), you cannot skip to tracks which have already been played.
- During program play (➡) or random play, you cannot search forward or backward over tracks.
- During program play, skipping is always in the programmed order, whether forward or backward.

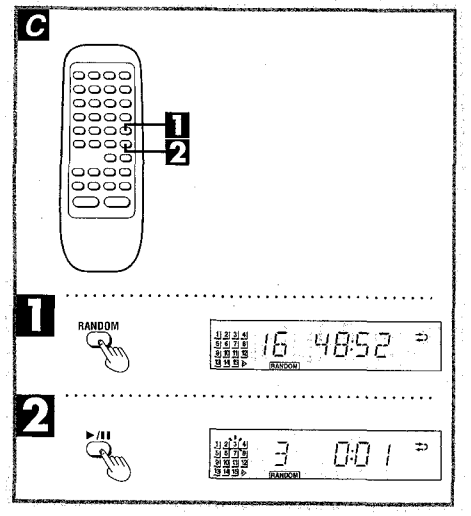
One-touch play
When the system is OFF and a CD is loaded, playing starts automatically when you press [▶/II].

For your reference
- When the system is OFF, the power will come on automatically and the tray is opened when you press [≜ OPEN/CLOSE].
- If you press [▶/II] instead of [≜ OPEN/CLOSE] after inserting a CD, the tray will close and play will start directly from the track 1.

To prevent damage A
Do not use irregular shaped CDs.







Direct access play A

by remote control only
Direct access allows you to start normal play from a specific track to the last track on the CD.

1 Press [■] to select the CD mode.

2 Press the numeric button(s) to select the desired track number.
Play will start with the track you select.

To select a two-digit track
Press [≥10] and then the two numbers you want.
For example
Track no. 20: [≥10]→[2]→[0]
Track no. 35: [≥10]→[3]→[5]

Repeat play B

by remote control only

Press [REPEAT] before or during play.
Every time you press the button; 1- ↻ → ↻ → Original display

To repeat only one track
Press [REPEAT] to select "1- ↻ ".

To repeat all tracks on the CD
Press [REPEAT] to select " ↻ ".

To cancel repeat play
Press [REPEAT] to return to the original display.

To repeat programmed tracks
① Program desired tracks (➡ steps 1 to 4 on page 8).
② Press [REPEAT] to select " ↻ ".
③ Press [▶/II] to begin play.

Random play C

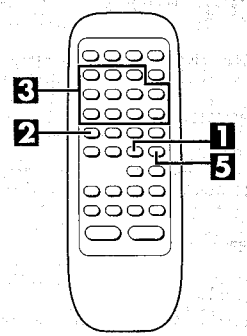
by remote control only

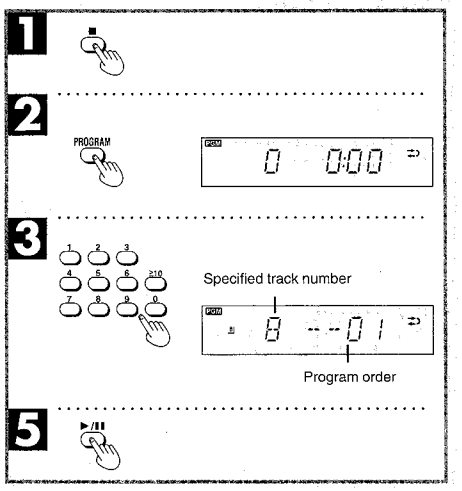
1 Press [RANDOM] when CD is in stop mode.
"RANDOM" will appear on the display.

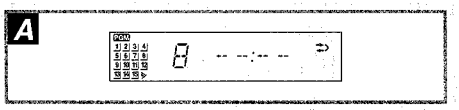
2 Press [▶/II].
All tracks on the loaded CD will be played in random order. Play will stop automatically when all tracks on the CD finish playing randomly.

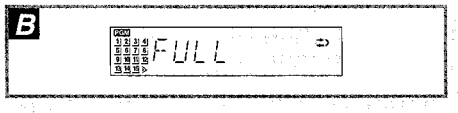
To cancel random play
Press [RANDOM] once again.
"RANDOM" will go out.

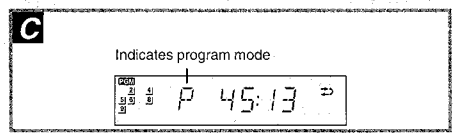
Note
Program play cannot be used in combination with random play.

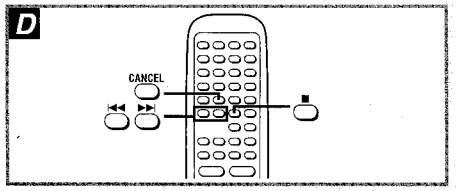












Program play

by remote control only

This function allows you to program up to 24 tracks.

1 Press [■] to select the CD mode.

2 [In the stop mode]
Press [PROGRAM].

3 Press the numeric button(s) to select the track you want to play in the desired sequence.

4 Repeat step 3 until you have programmed all the tracks you want.

5 Press [▶/❚❚].
Play will start in the programmed sequence.
Play will stop automatically when all the programmed tracks have been played.

For your reference
You can also select tracks for programming by pressing [|◀◀] or [▶▶|] and [PROGRAM] instead of following steps 2 and 3.
① Select desired tracks using the [|◀◀] or [▶▶|].
② Press [PROGRAM].

To cancel program play mode
- Press [PROGRAM] in the stop mode.
  Programmed contents will be saved in memory.
- Press [■] in the stop mode.
  This will also erase the entire program.

To select a two-digit track
Press [≥10] and then the two numbers you want.

When "--:--" is displayed A
Total play time of the programmed tracks exceeds 100 minutes.
Tracks can still be programmed and played.

When "FULL" appears B
The number of programmed tracks is limited to 24. No further tracks can be programmed.

Check program contents.
Check to see if "P" is displayed, then press either [|◀◀] or [▶▶|]. C
Everytime you press one of the buttons, the track and program No. are shown on the display.

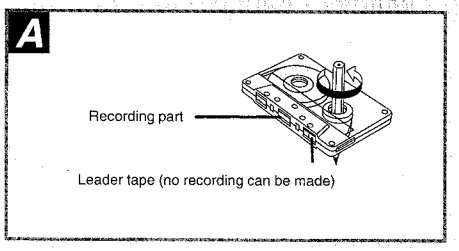
Add to the program.
In stop mode, repeat step 3.

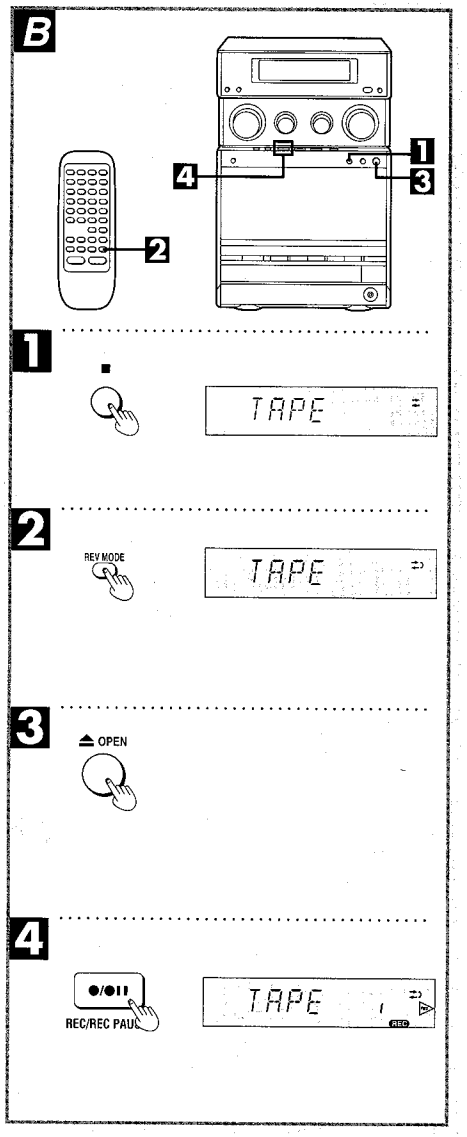
Cancel entries. D

From the last programmed track	Press [CANCEL].
A specified track only	Check to see if "P" is displayed, then select the track with [|◀◀] or [▶▶|], and press [CANCEL] within 3 seconds. C
All tracks	Press [■].

Memory retention
Your program is retained in memory for about 2 weeks while the system is unplugged.

To replay your program
If you turned OFF your program with [PROGRAM], you can play it again as explained below.
1. Press [PROGRAM].
2. Press [▶/❚❚].





Types of tapes which can be recorded correctly

The system automatically identifies the type of tape.

NORMAL POSITION/TYPE I	○
HIGH POSITION/TYPE II	○
METAL POSITION/TYPE IV	×

This system cannot correctly record or erase metal position tapes .

To record from the beginning of the tape A

You cannot record on the leader part of the tape. Before recording, wind the tape past the leader to a point where recording can start immediately.

The effect of volume, sound quality, and sound virtualizer on recording

These have no effect on recording.
They can be changed for playback.

To erase a recorded sound B

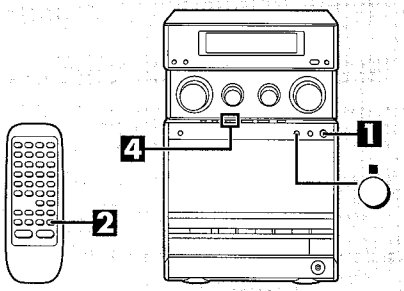
1 Press [■].

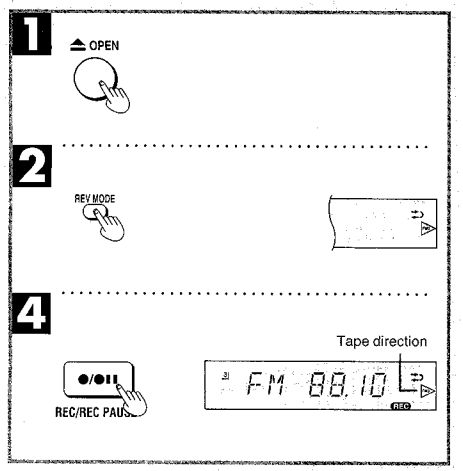
2 Press [REV MODE] on the remote control to select the reverse mode.

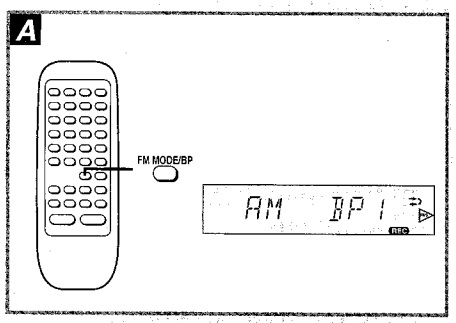
3 Press [⏏ OPEN] and insert the tape.
Close the holder by hand.
Tape direction is automatically set to "▷".

4 Press [●/● ❚❚ REC/REC PAUSE].

Your attention is drawn to the fact that recording pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.







Recording radio broadcasts

1 Press [▲ OPEN] and insert the tape.
Close the holder by hand.
Tape direction is automatically set to "▷".

2 Press [REV MODE] on the remote control to select the reverse mode.
Every time you press the button;
⇄ → ⇄⊃ → ⊂⇄⊃

⇄: One side is recorded, then recording stops automatically.
⇄⊃, ⊂⇄⊃: Both sides (front side→reverse side) are recorded, then recording stops automatically.

3 Select a radio station.

4 Press [●/● II REC/REC PAUSE] to start recording.
If you selected "⊂⇄⊃" in step 2, the direction will automatically change to "⇄⊃" when recording starts.

To stop recording
Press [■].

To stop recording temporarily
Press [●/● II REC/REC PAUSE].
To resume recording, press [●/● II REC/REC PAUSE].

To start recording on reverse side
Before recording, press [◄ ►] twice and immediately thereafter [■].
The tape direction will be shown as "◁".

To record from a specific point on a tape
Before recording, advance the tape to the point from where you want to start recording.

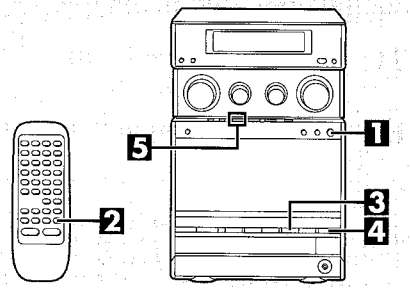
To cut an unnecessary part while recording
1. Press [●/● II REC/REC PAUSE] when hearing an unnecessary part. The cassette deck will go into the recording standby mode.
2. Press [●/● II REC/REC PAUSE] to resume recording. Recording will continue in the same direction as before.

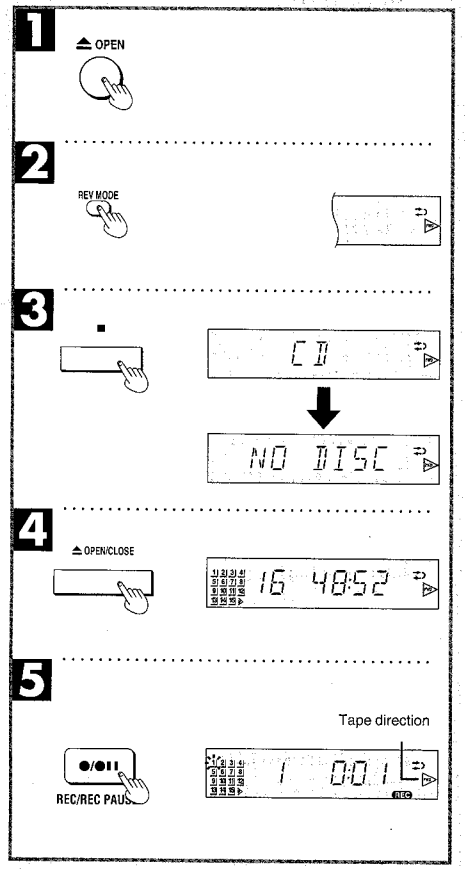
Note
When recording an AM broadcast, volume is momentarily interrupted when you start and stop the recording.

To reduce the noise while recording an AM broadcast (Beat proof function) A

by remote control only

Press [FM MODE/BP] during recording or in the recording standby mode.
Each time you press the button, "BP 1" and "BP 2" will be displayed alternately.
Select the position where there is less noise.





Recording CDs

Normal recording

- Tracks are recorded in the order in which they are found on the CD.
- Tracks are cut in the middle when the end of the tape is reached.
- You can record from any point on the tape.

1 Press [▲ OPEN] and insert the tape.
Close the holder by hand.
Tape direction is automatically set to "▷".

2 Press [REV MODE] on the remote control to select the reverse mode.
Every time you press the button;
⇄ → ⇄⊃ → ⊂⇄⊃

⇄: One side is recorded, then recording stops automatically.
⇄⊃, ⊂⇄⊃: Both sides (front side→reverse side) are recorded, then recording stops automatically.

3 Press [■] to select the CD mode.

4 Press [▲ OPEN/CLOSE] to open the CD tray.
Insert the CD with label facing upward.
Press [▲ OPEN/CLOSE] to close the CD tray.

5 Press [●/● II REC/REC PAUSE] to start recording.
- If you selected "⊂⇄⊃" in step 2, the direction will automatically change to "⇄⊃" when recording starts.
- The recording will start from the first track.

To stop recording
- To add a 4 second silent interval before stopping
  Press [■] on the CD control section.
  The CD will stop and the cassette deck will go into the recording standby mode.
  To cancel the recording standby mode, press [■] on the cassette deck control section.
- To stop recording without a silent interval
  Press [■] on the cassette deck control section.
  The recording will stop and the CD will go on.

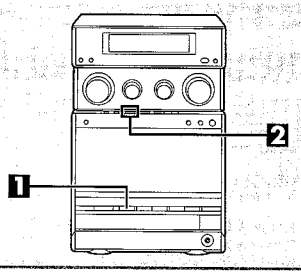
To stop recording temporarily
Press [●/● II REC/REC PAUSE].
To resume recording, press [●/● II REC/REC PAUSE].

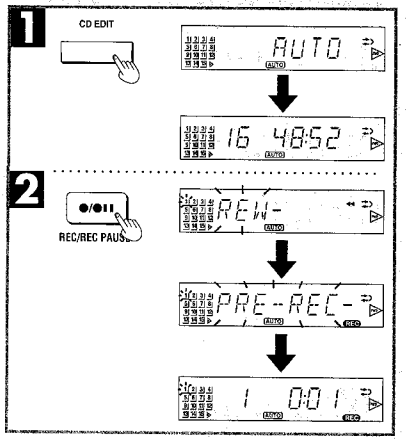
To record on reverse side
Before recording, press [◄ ►] twice and immediately thereafter [■].
The tape direction will be shown as "◁".

To record from a specific point on a tape
Before recording, advance the tape to the point from where you want to start recording.

To record programmed tracks

1. After step 4, program the track(s) you want (➡ steps 2–4 on page 8).
2. Press [●/● II REC/REC PAUSE] to start recording.





Auto edit recording (AUTO)

- Tracks are recorded in the order in which they are found on the CD.
- Tracks are cut in the middle when the end of the tape is reached, but recording is resumed on side B.
- Recording always starts from the beginning of side A on the tape. (Tapes are automatically rewound.)
- Be sure to use cassette tapes which have tabs on both side A and side B.

Before recording
Perform steps 1, 3 and 4 on page 9.

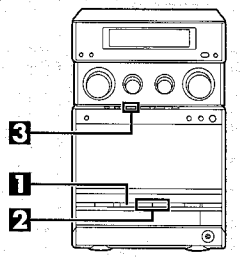
1 Press [CD EDIT] to select "AUTO".
Every time you press the button;
AUTO→1-REC→OFF

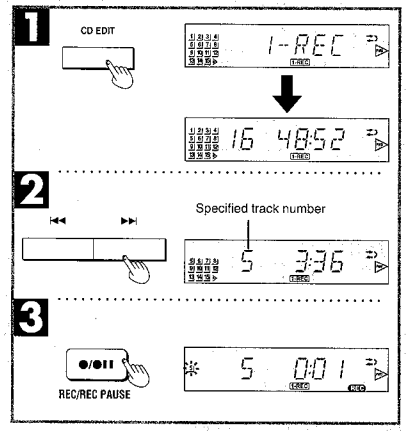
2 Press [●/● II REC/REC PAUSE].
The tape automatically rewinds, and recording from the first track begins after a 10 second interval of silence.
Reverse mode is displayed as "⇄".
When the recording is completed, the auto edit recording mode is automatically cancelled.

To stop recording
Press [■] on the cassette deck control section.
Both the tape and the CD stop.

To record programmed track(s)
1. Program the track(s) you want (➡ steps 2–4 on page 8).
2. Perform steps 1 and 2 above to start recording.

Note
- Auto edit recording cannot be used in combination with random play and repeat play.
- If auto edit recording is started when setting-up the sleep timer or when the timer is activated, this will automatically cancel the sleep timer.





One track edit recording (1-REC)

- You can select one of your favorite tracks from a CD to record.
- Tracks are cut in the middle when the end of the tape is reached, but recording is resumed on side B.
- Recording can begin from any place on the tape.

Before recording
Perform steps 1, 3 and 4 on page 9.

1 Press [CD EDIT] to select "1-REC".
Every time you press the button;
AUTO→1-REC→OFF

2 Press [⏮] or [⏭] to select the track to be recorded.
You can omit this step when recording the first track on the CD.

3 Press [●/● II REC/REC PAUSE].
CD play and recording begin simultaneously.
Records only one track and stops.
Reverse mode is displayed as "⇄".

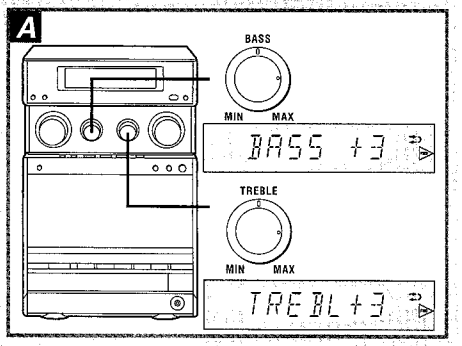
To continue recording with another CD
Press [⏏ OPEN/CLOSE] to open the CD tray, insert a CD and follow steps 2 and 3 above.

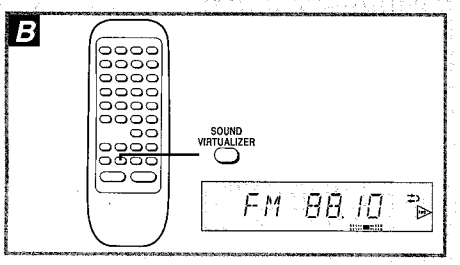
To stop recording
Press [■] on the cassette deck control section.
Both the tape and the CD stop.

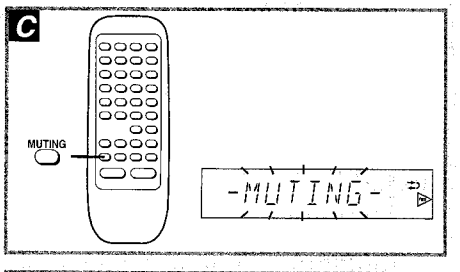
To cancel the one track edit recording mode
Press [CD EDIT] to select "OFF".

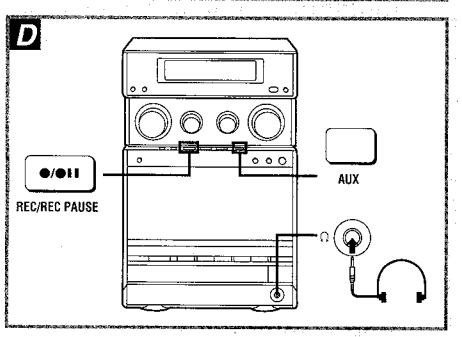
For your reference
- If you select one track edit recording when in program mode, the first programmed track will be recorded.
- If you select one track edit recording when in random mode, the first randomly selected track will be recorded.

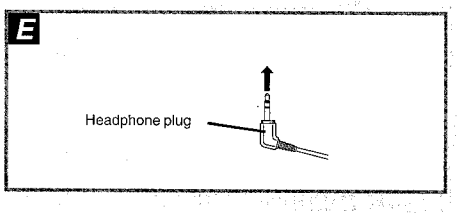
Note
If one track edit recording is started when setting-up the sleep timer or when the timer is activated, this will automatically cancel the sleep timer.











Changing the sound quality, etc.

To adjust the tone quality A

The tone level can be varied within a range of −6 to +6.
Turn [BASS] to adjust the low-frequency sound.
Turn [TREBLE] to adjust the high-frequency sound.

Note
The effect works only with playback. It cannot be used in recording.

Hints
Place speakers on stands (not included) to reproduce clearer low-range sounds.

Using the "live" effect (SOUND VIRTUALIZER) B

by remote control only
The sound virtualizer leaves middle-range sounds such as vocals clear and gives natural width and depth to music.
Sound virtualizer is effective with stereo sound.

Press [SOUND VIRTUALIZER] to display " ▪▪▪■▪▪▪ ".

To cancel
Press [SOUND VIRTUALIZER] to clear the " ▪▪▪■▪▪▪ " indicator.
- When listening through headphones, the effect is less discernable than through the unit's speakers.
- If interference in FM stereo reception increases, cancel the sound virtualizer effect.

To mute the volume C

by remote control only
This feature is convenient when you have a telephone call, etc.

Press [MUTING].
Press the button again to cancel. ("MUTING" goes out.)
Muting can also be cancelled by lowering the volume all the way (-- dB).
When the system is turned off, the muting operation will be automatically cancelled.

Using an external unit D

Listening to an external source

(See page 6 for external unit connection.)
1. Press [AUX].
2. Start playback from the external source. (Refer to your equipment's operating instructions.)

Recording from an external source

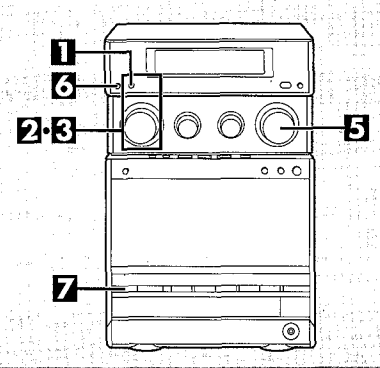
1. Follow steps 1–2 on page 13.
2. Press [AUX].
3. Press [●/● II REC/REC PAUSE] (recording starts).
4. Start playback from the external source. (Refer to your equipment's operating instructions.)

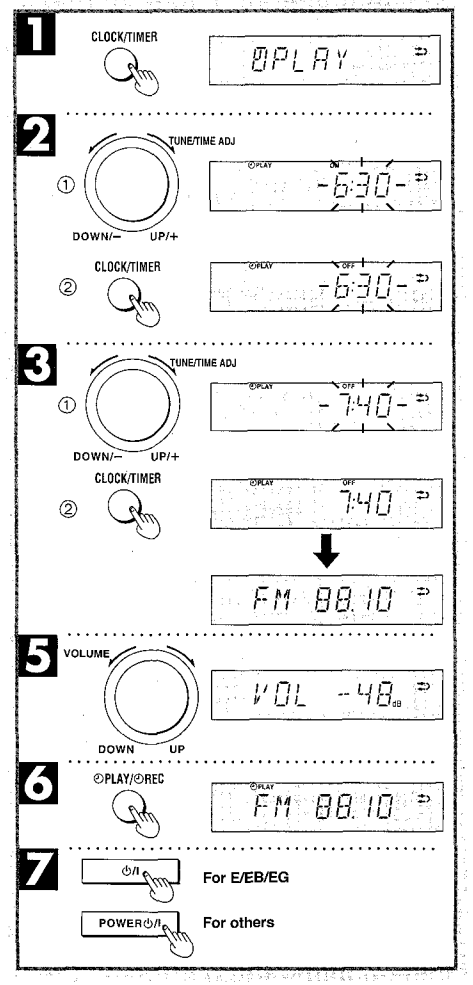
Listening with headphones

Reduce the volume level, and connect the headphones.
Plug type: 3.5 mm stereo

Note
- Avoid listening for prolonged periods of time to prevent hearing damage.
- When using L-plug headphones (not included), turn the plug to the right when inserting into the system. E

■ USING THE TIMER





Using the play timer

Select this timer when you want to use the timer as an alarm clock. You can wake up while listening to music (CD, tuner, tape or AUX) at a desired volume level and time.

Preparations

- Make sure that you have completed "Setting the time" on page 8.
- Press [⏻/I] to turn the unit on.
  The glide panel retracts enabling access to the operation buttons.

The figure shows how to set the play timer for 6:30 to 7:40.

1 Press [CLOCK/TIMER] to select "◴ PLAY".
Every time you press the button;
CLOCK→◴ PLAY→◴ REC
↑—Previous display←┘

2 "ON" time setting

① (Within 8 seconds or so)
Turn [TUNE/TIME ADJ] to the right or left to select the "ON" time.
② Press [CLOCK/TIMER].

3 "OFF" time setting

① Turn [TUNE/TIME ADJ] to the right or left to select the "OFF" time.
② Press [CLOCK/TIMER].

4 Source selection

Select the desired source and then prepare for playing.

When you play CD
Press [■] on the CD control section and insert CD.

When you play tape
Press [■] on the cassette deck control section and insert tape.

When you play the radio
Press [TUNER/BAND] to select "FM" or "AM" and tune in the desired station.

When you play a unit connected to the "AUX" terminals
Press [AUX].

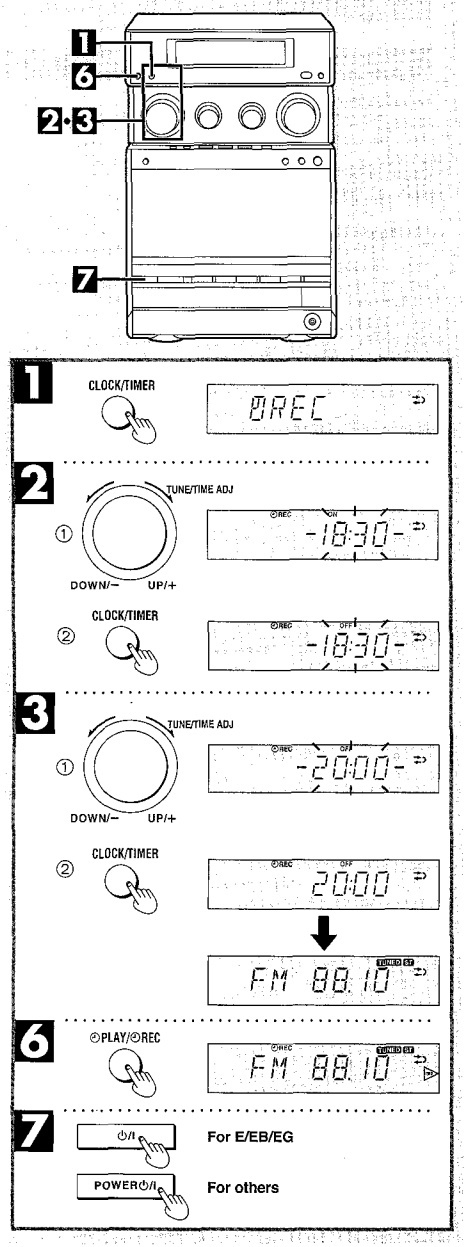
5 Play volume setting

Set the playback volume.

6 Press [◴ PLAY/◴ REC] to select "◴ PLAY".
Each time the button is pressed:
◴ PLAY——→◴ REC
↑—Original display←┘

If the record timer has not been set
Each time it is pressed: ◴ PLAY←→Original display

7 Press [⏻/I] to turn the unit off.
The timer play will start at the preset time with volume increasing gradually up to the volume level you preset.



Using the record timer

Select this timer when you want to use the timer to record a midnight program or while you are out.

Preparations

- Make sure that you have completed "Setting the time" on page 8.
- Press [⏻/I] to turn the unit on.
  The glide panel retracts enabling access to the operation buttons.

Set the timer at least 2 minutes before you want to start recording.

The figure shows how to set the record timer for recording FM broadcasts from 18:30 to 20:00.

1 Press [CLOCK/TIMER] to select "◴ REC".
Every time you press the button;
CLOCK→◴ PLAY→◴ REC
↑—Previous display←┘

2 "ON" time setting

① (Within 8 seconds or so)
Turn [TUNE/TIME ADJ] to the right or left to select the "ON" time.
② Press [CLOCK/TIMER].

3 "OFF" time setting

① Turn [TUNE/TIME ADJ] to the right or left to select the "OFF" time.
② Press [CLOCK/TIMER].

4 Source selection

Select the desired source and then prepare for recording.

When you record from the radio
Press [TUNER/BAND] to select "FM" or "AM" and tune in the desired station.

When you record from a unit connected to the "AUX" terminals
Press [AUX].

5 Prepare for recording.
1. Insert a tape into the cassette holder with the side on which the recording will start facing you.
2. Select the reverse mode on the remote control.

6 Press [◴ PLAY/◴ REC] to select "◴ REC".
Each time the button is pressed:
◴ PLAY——→◴ REC
↑—Original display←┘

If the play timer has not been set
Each time it is pressed: ◴ REC←→Original display

7 Press [⏻/I] to turn the unit off.
About 30 seconds before the set time, the system mutes sound automatically and starts recording.

Turning the timer ON/OFF
As long as "⏲ PLAY" or "⏲ REC" is displayed, the timer will come ON everyday as set.
You can turn the timer ON/OFF by pressing [⏲ PLAY/⏲ REC] while the system is OFF.
Remember that when "⏲ PLAY" or "⏲ REC" is displayed, the timer is ON. When not displayed, the timer is OFF.

Note
- If the power is on, the timer will not function. The system must be in the standby mode.
- If you switch the power to the standby mode while the play/record timer is functioning, the OFF time setting will not be activated.
- If AUX is selected as the source, when the timer comes ON, the system will turn ON and will engage "AUX" as the source. If you want to playback or record from a connected component, set the component's timer to the same time. (See the instruction manual that came with the component.)

Using the play/record timer

To switch the timer OFF
Press [⏲ PLAY/⏲ REC] and check "⏲ PLAY" (for play timer) or "⏲ REC" (for record timer) goes out.

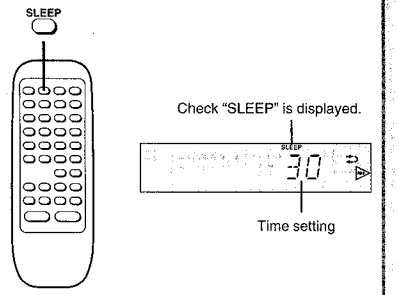
If you set the timer incorrectly
Repeat the procedure from step **1**.

To check settings
Press [CLOCK/TIMER] to select "⏲ PLAY" (for play timer) or "⏲ REC" (for record timer).
Two seconds later, the display will change in the following order.
① Start time
② End time
③ Source
④ Volume (play timer only)

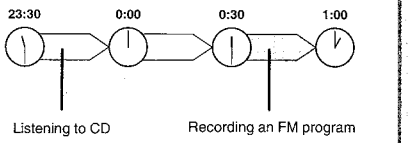
You can check the settings even when the system is OFF.

To enjoy the desired source after the timer setting is completed
Even if you change the volume level or music source, the timer will start with the preset condition.
1. Following step **6**, start playing the desired source.
2. Press [⏻/I] to standby mode after enjoying the source, and confirm a CD or tape has been inserted.
   Be sure to reset tape in the direction you want the tape to play/record on timer.

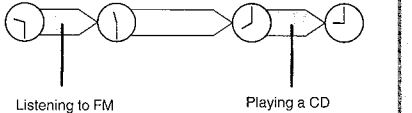
A



B



C



Using the sleep timer

This timer turns your system OFF at the set time (Max. 2 hours, settable at 30 minute intervals). It lets you fall asleep while listening to music.

by remote control only

While enjoying the desired source:
Press [SLEEP] to select the desired time. A

Every time you press the button;
→30→60→90→120→OFF

The figure shows how to set the system to standby mode after 30 minutes.
The system is turned off after the set time has elapsed.

To cancel the sleep timer
Press [SLEEP] to select "OFF".

To confirm the remaining time
(only while power is ON)
Press [SLEEP].

To change the time remaining during operation
Press [SLEEP] to show the remaining time, and then press [SLEEP] to select the desired time.

Note
The sleep timer turns OFF automatically the moment you attempt to record a CD using the CD edit recording function.

To use two timers together

The sleep timer always has priority.
Be sure not to overlap timer settings.

Record timer and sleep timer B
To go to sleep listening to a compact disc, and then to make a timer recording from a radio broadcast.
① Program the record timer.
   Follow steps **1**–**6** on page 11.
② Start CD and set the volume.
③ Set the sleep timer (see above).

Be sure to set the sleep timer to finish before the timer recording begins.

Play timer and sleep timer C
To go to sleep listening to an FM broadcast, and wake up the next morning listening to a compact disc.
① Program a CD for play timer.
   Follow steps **1**–**6** on page 11.
② Tune in the station and set the volume.
③ Set the sleep timer (see above).

For your reference
The play timer cannot be used in combination with the record timer.

■ Operation Checks

"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

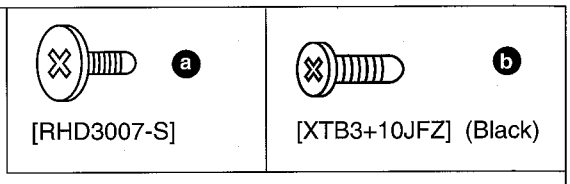
1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Select items from the following index when checks or replacement are required.**

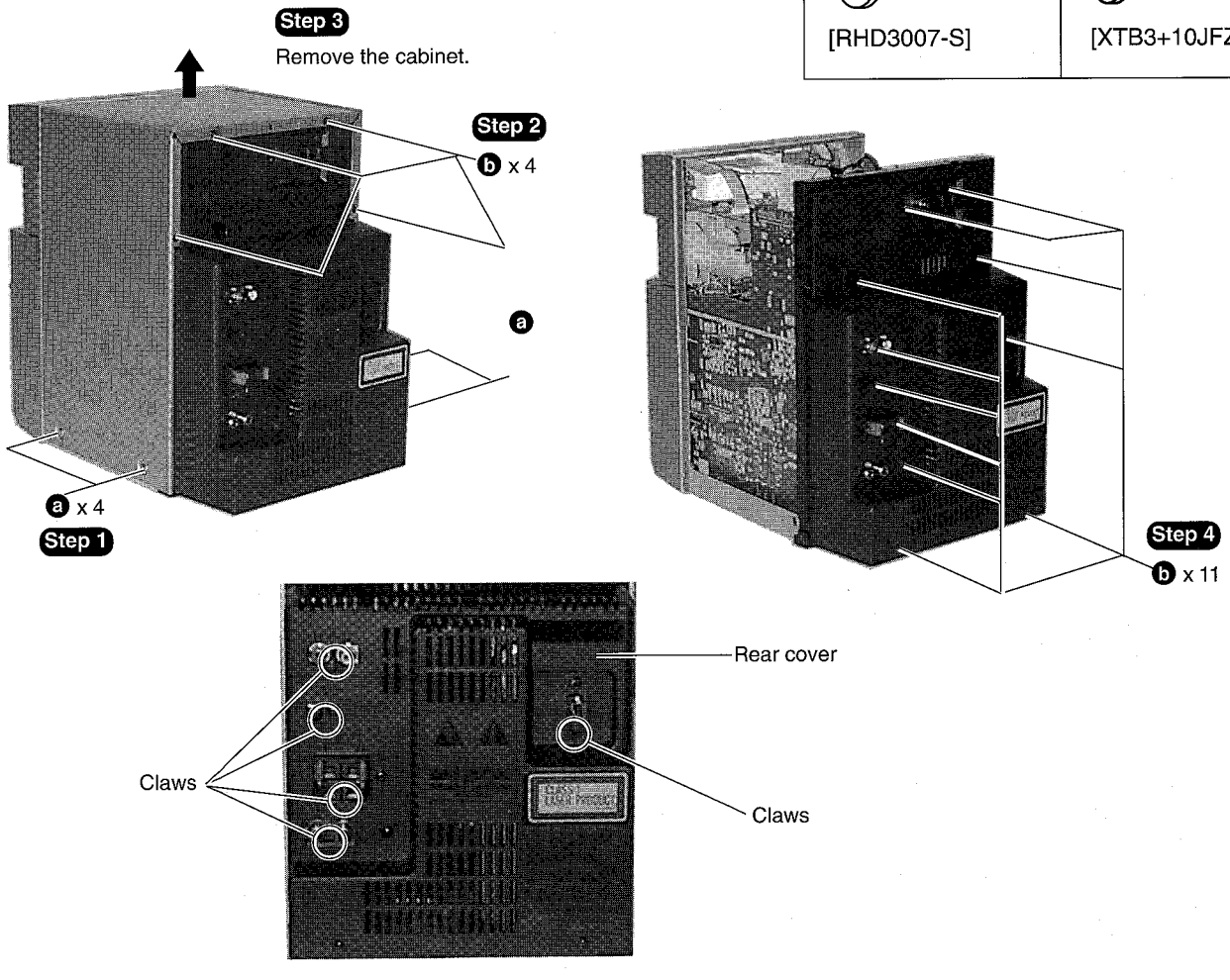
• Contents

page
• **Checking Procedure For Each Major P.C.B.** ..... 13 ~ 16
• **Main Component Replacement Procedures**
1) Replacement for the cassette deck lid 17
2) Replacement for the traverse deck ass'y 17
3) Replacement for the slide panel motor ass'y and belt 18

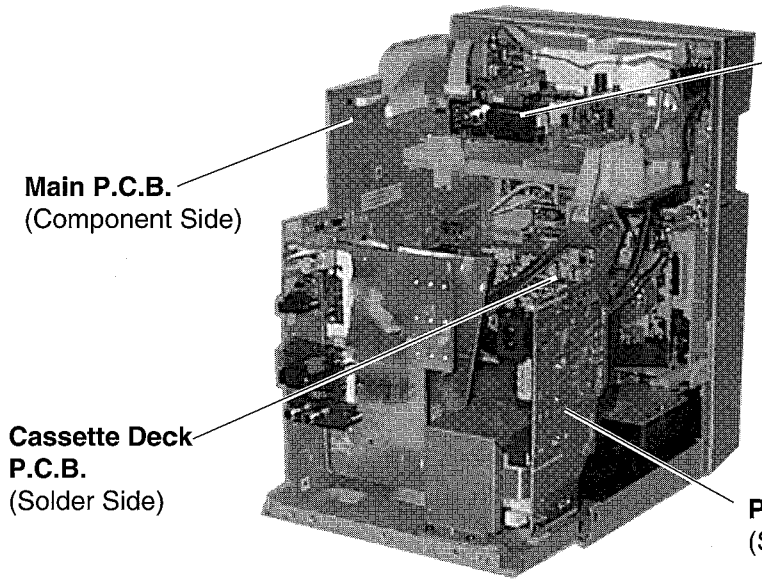
Warning : This product uses a laser diode. Refer to caution statement on page 3.
ACHTUNG : • Die Lasereinheit nicht zerlegen.
• Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

■ Checking Procedure For Each Major P.C.B.



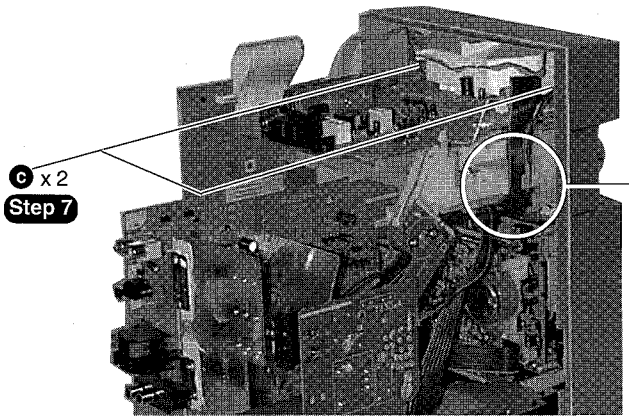


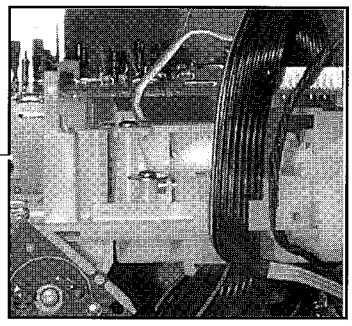
Step 5
Release the claws with thin tips of minus screwdriver, and then remove the rear cover.



Step 6

Remove the flat cables from the hook.

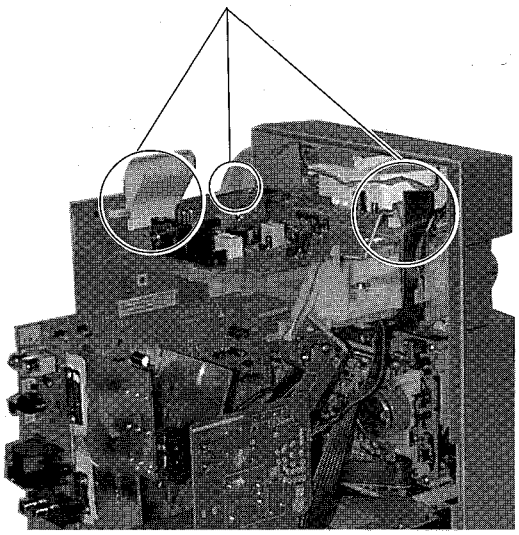




[XTBS26+10J]

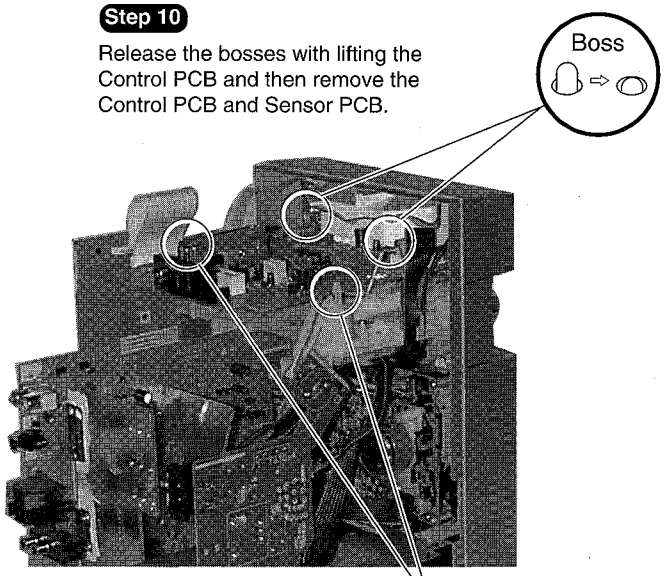
Step 8

Remove the connectors.



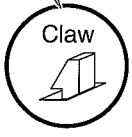
Step 10

Release the bosses with lifting the Control PCB and then remove the Control PCB and Sensor PCB.

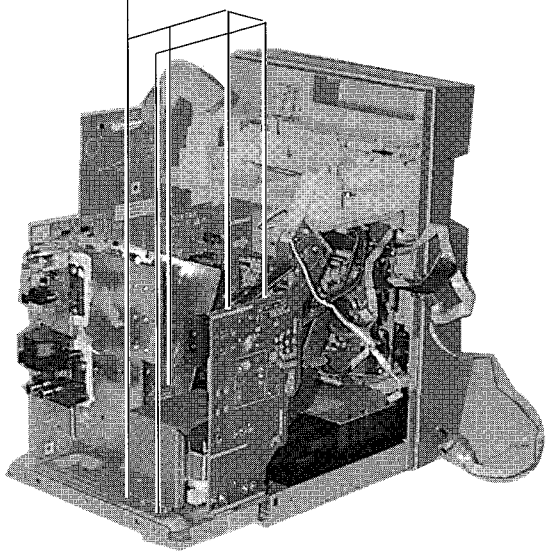


Step 9

Release the 2 claws

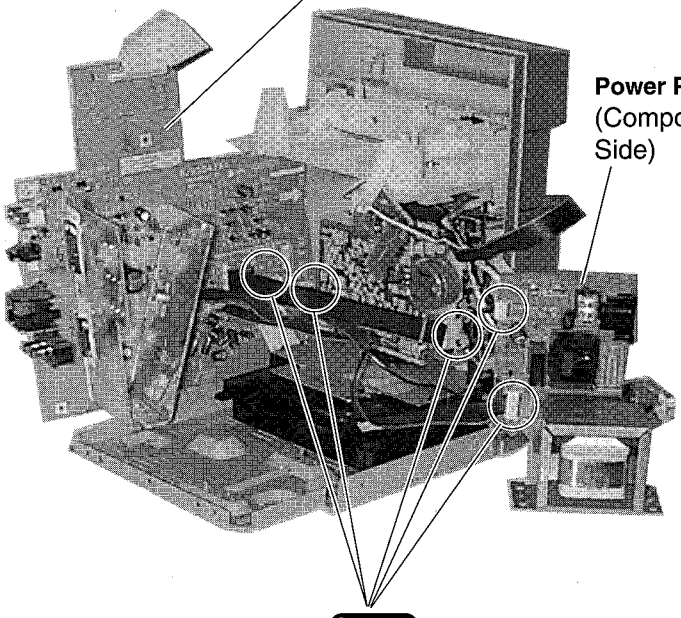


Step 11
ⓑ x 5



Main P.C.B.
(Component Side)

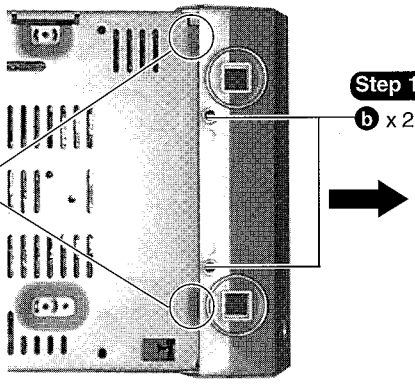
Power P.C.B.
(Component Side)



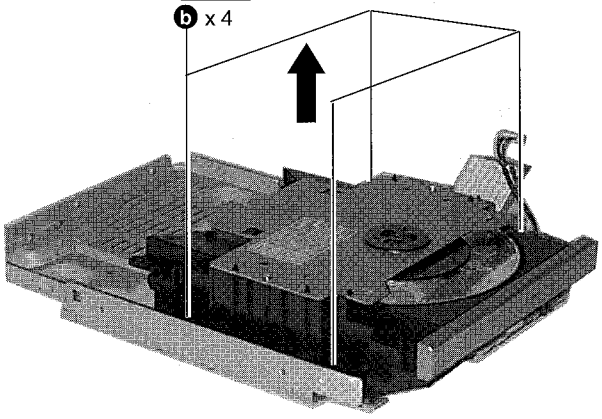
Step 12
Remove the connectors.

Step 13
ⓑ x 2

Step 14
Remove the rib with a minus screwdriver and pull out the front panel in the direction of arrow.

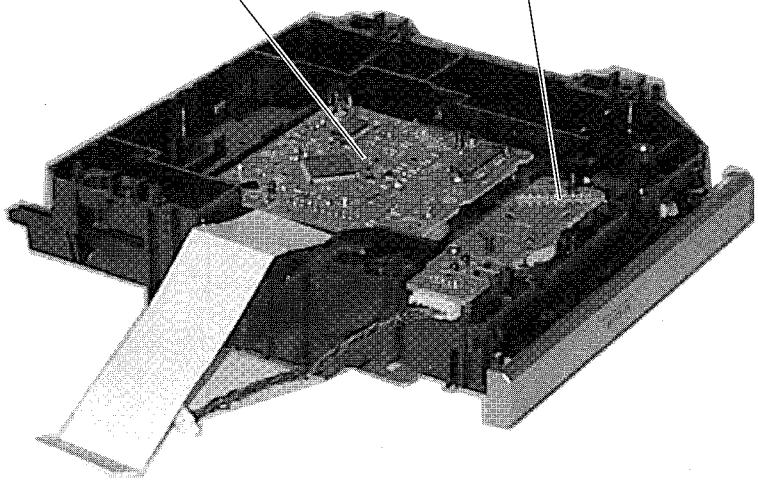


Step 15
ⓑ x 4

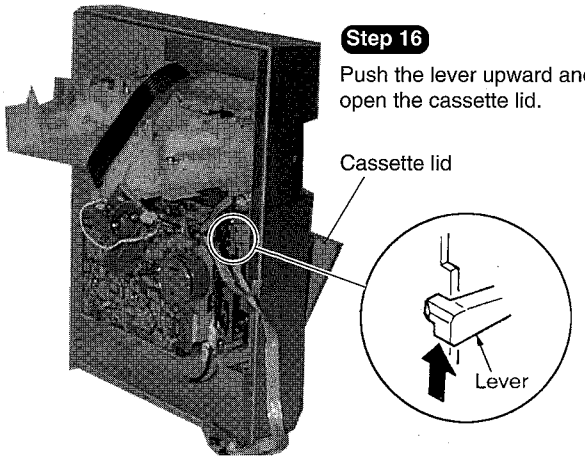


CD Servo P.C.B.
(Component Side)

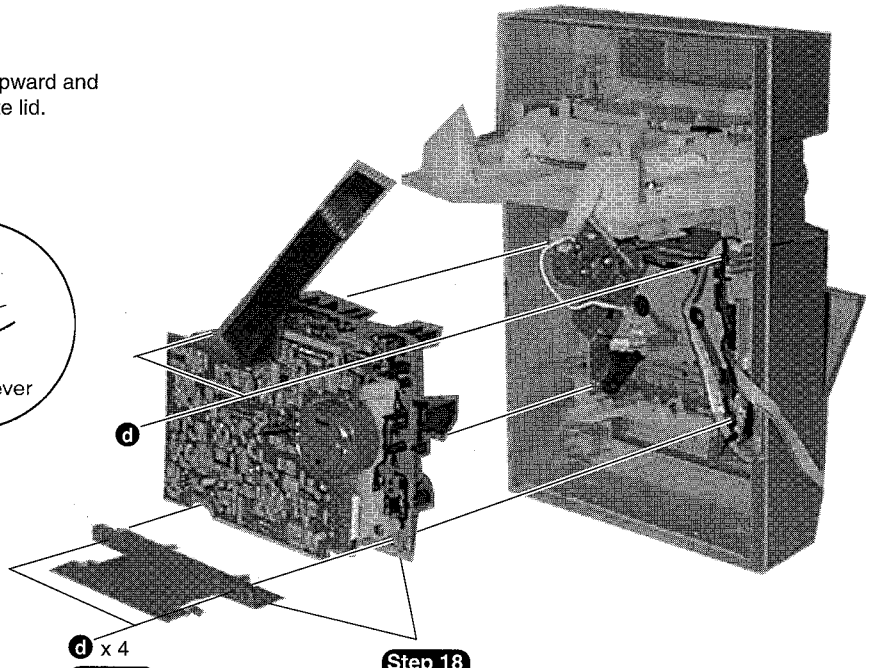
Loading Motor P.C.B.
(Component Side)



ⓑ
[XTB3+10JFZ] (Black)



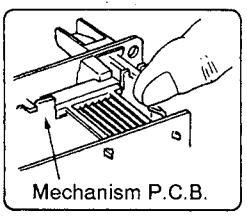
Step 16
Push the lever upward and open the cassette lid.

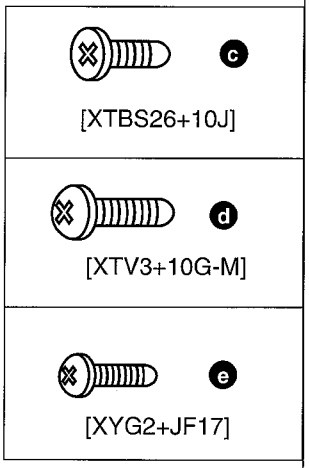


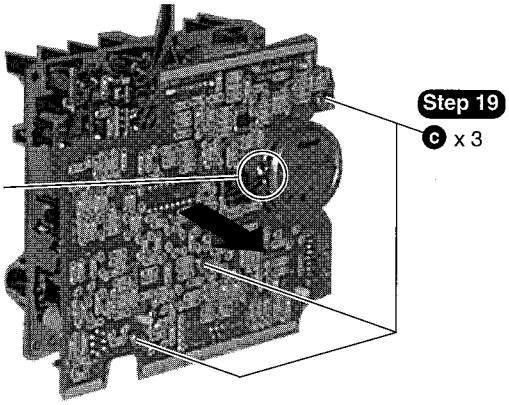
Step 17

Step 18
Remove the shield plate and cassette mechanism.

Step 21
When removing the Cassette Deck P.C.B., remove by holding the Mechanism P.C.B. and pull the P.C.B. in the direction of the arrow.



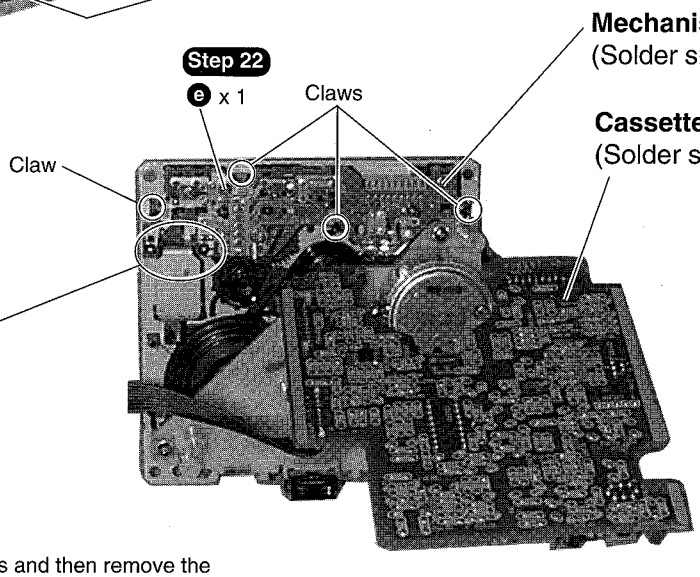




Step 19
c x 3

Step 20
Unsolder the motor terminals. (2 points)

Step 22
e x 1



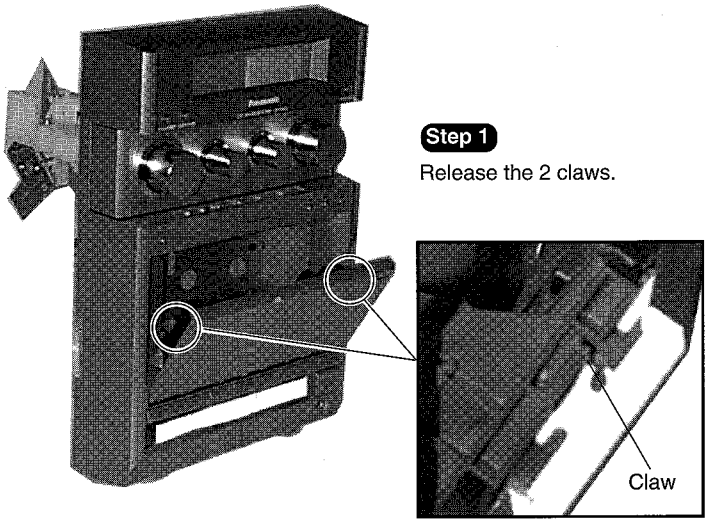
Step 23
Unsolder the plunger terminals. (2 points)

Step 24
Release the 4 claws and then remove the Mechanism P.C.B..

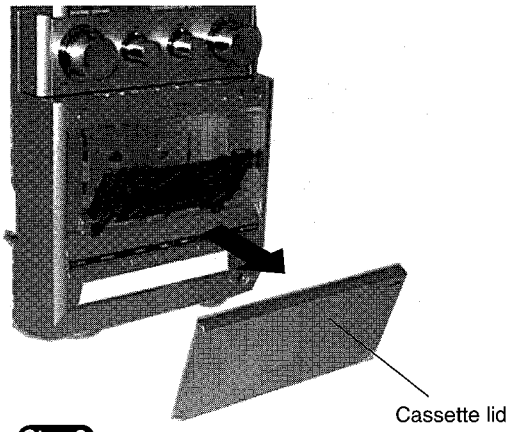
■ Main Component Replacement Procedures

1. Replacement for the cassette deck lid

- Follow (step 1 to step 14 and 16) in checking procedures for each P.C.B. on page 13 ~ 16.



Step 1
Release the 2 claws.

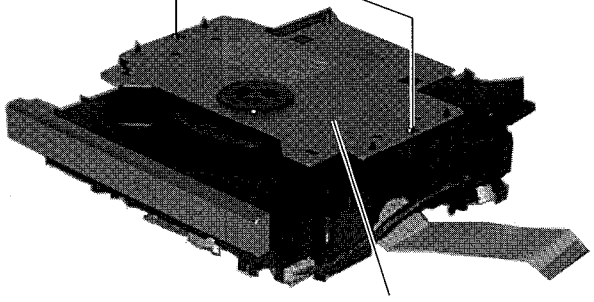


Step 2
Remove the cassette lid in the direction of arrow.

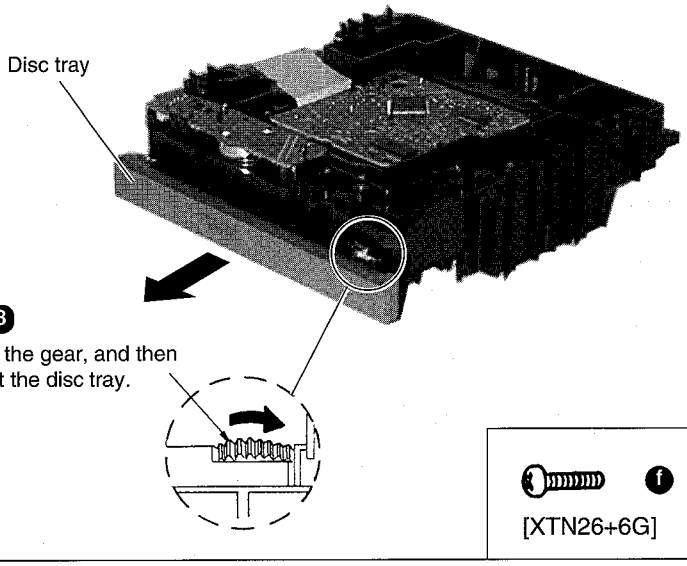
2. Replacement for the traverse deck ass'y

- Follow (step 1 to step 15) in checking procedures for each P.C.B. on page 13 ~ 15.

Step 1
ⓕ x 2

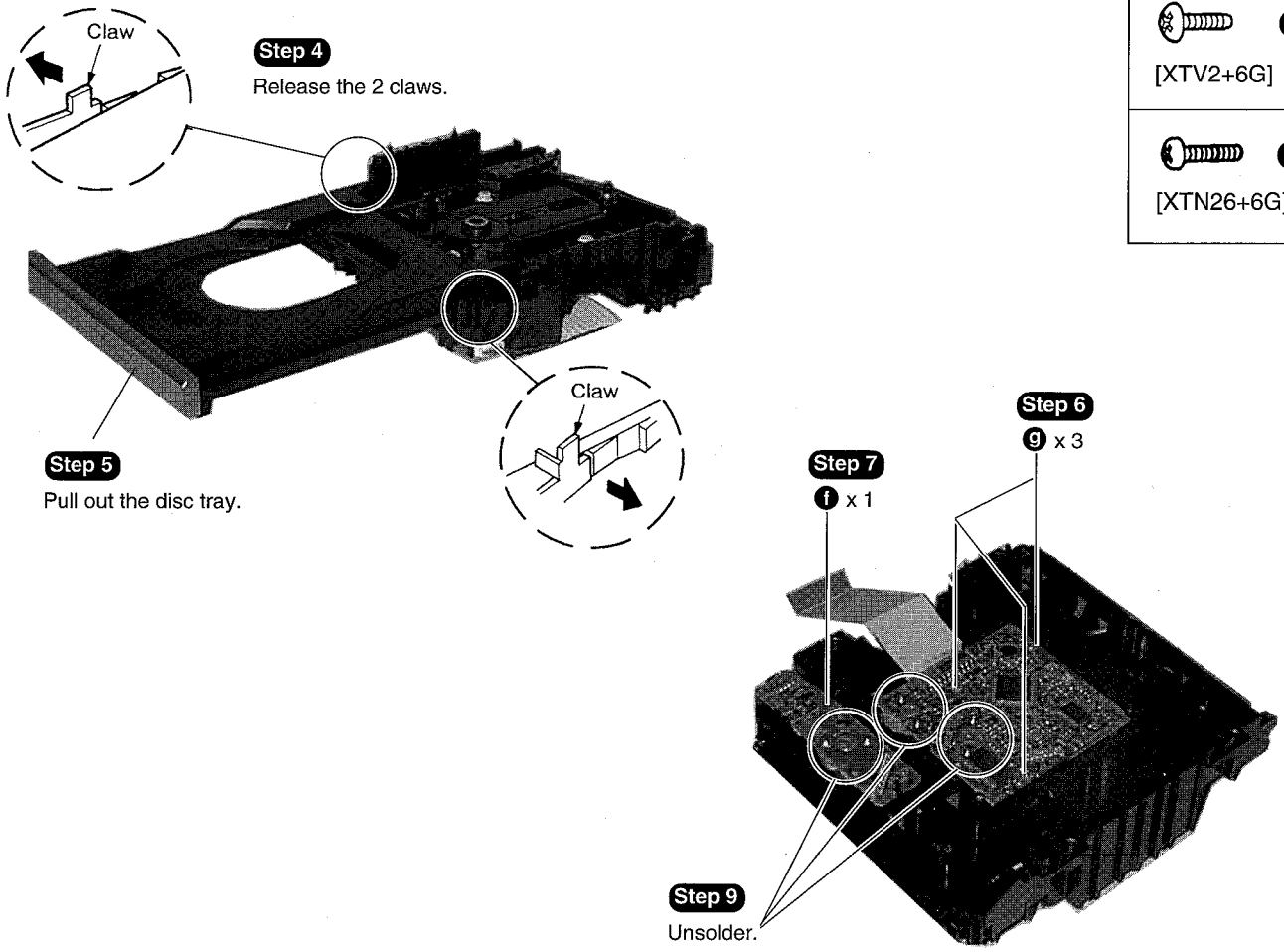


Step 2
Remove the disc clamper ass'y.



Step 3
Rotate the gear, and then pull out the disc tray.

ⓕ [XTN26+6G]

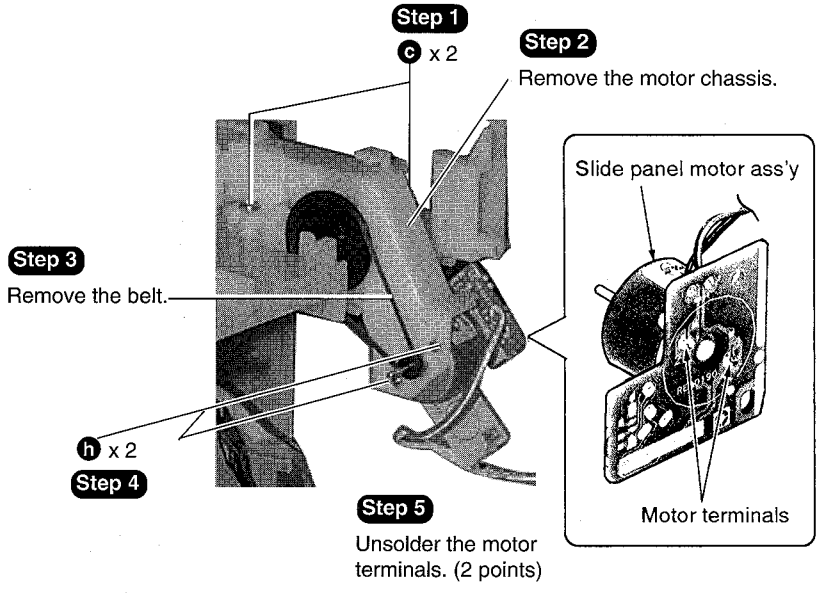


g [XTV2+6G]

f [XTN26+6G]

3. Replacement for the slide panel motor ass'y and belt.

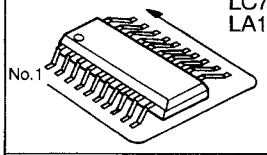
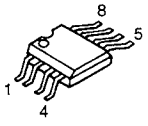
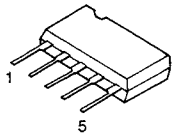
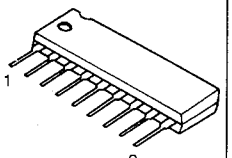
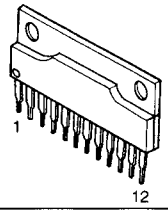
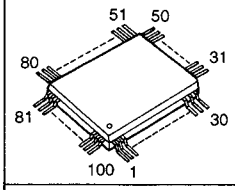
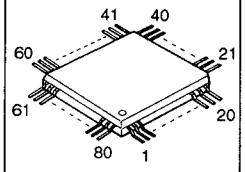
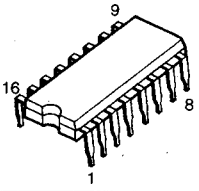
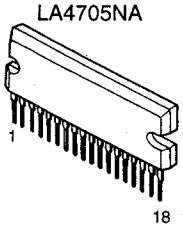
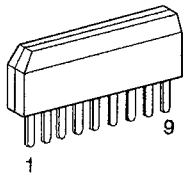
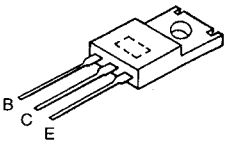
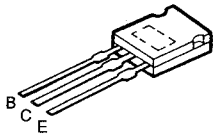
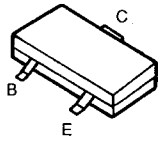
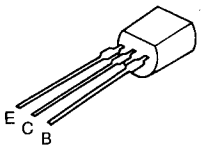
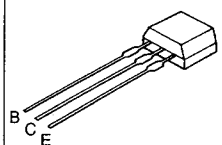
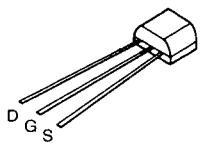
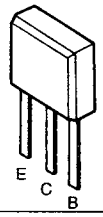
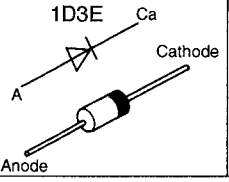
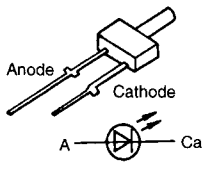
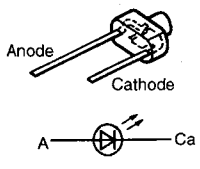
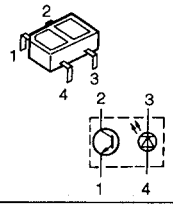
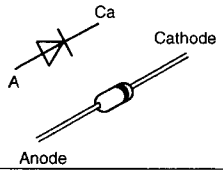
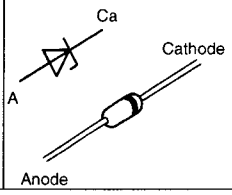
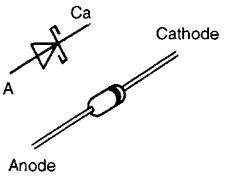
- Follow (step 1 to step 10) in checking procedures for each P.C.B. on page 13 ~ 14.



c [XTBS26+10J]

h [XQN2+C3]

■ Terminal Guide of ICs, Transistors and Diodes

<table>
<tr>
<td colspan="2">AN8837SBE1 (28 P)
BH3857AFV-E2 (40 P)
AN8780NSBE2 (28 P)
LC72131MDTRM (20 P)
LA1833MN-TLM (24 P)
  </td>
<td>BA4558FE2
  </td>
<td>BA7755A
  </td>
<td>BA6283N
  </td>
<td>AN7135
  </td>
</tr>
<tr>
<td>M38258M054FP
  </td>
<td>MN662746RPK1
  </td>
<td>TA8142AP
  </td>
<td>LA4705NA
  </td>
<td>TA7291S
  </td>
<td>2SB1566E
  </td>
</tr>
<tr>
<td>2SD2037ETA
  </td>
<td>2SA1037AKSTX
DTC114YKA146
  </td>
<td colspan="2">2SA952LTA
2SC1845FTA
2SC2001LTA
2SD965RTA
2SD592ARTA
2SC2001KTA
  </td>
<td>2SC1740SLNST
2SC1740SRTA
RVTDTA114EST
  </td>
<td>RVTDTA114YST
RVTDTA143TST
RVTDTA143XST
RVTDTC114EST
RVTDTC114TST
RVTDTC124TST
RVTDTC143XST
RVTDTC144EST</td>
</tr>
<tr>
<td>2SJ498CTA
  </td>
<td>  </td>
<td>2SB1030RTA
2SC2787LTA
2SA1309AQSTA</td>
<td>1N5402BM21
RL1N4003N02
1D3E
  </td>
<td>LN282RPXTA
  </td>
<td>SLR325MCT31
  </td>
</tr>
<tr>
<td>ON2180RLC
  </td>
<td>  </td>
<td>1SS291TA
MA165TA
RVD1SS133TA</td>
<td>  </td>
<td>MTZJ5R1BTA
MTZJ5R6CTA
MTZJ5R6ATA
MTZJ8R2BTA
MTZJ9R1ATA
MTZJ15CTA
MTZJ24DTA
MTZJ7R5BTA</td>
<td>RB441Q40T77
  </td>
</tr>
</table>

■ Terminal Function of IC's

• IC701 (AN8837SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	VCC	I	Power supply connection
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD connection
7	LD	O	Laser power auto control output
8	RF	O	RF signal output
9	RFIN	I	RF signal input
10	CSBRT	I	Capacitor for detection connection
11	CEA	I	Capacitor connection for HPF amplifier
12	BDO	O	BDO output ("H" : drop out)
13	LDON	I	LD APC input ("H" : ON, "L" : OFF)
14	GND	—	Ground connection

Pin No.	Mark	I/O	Function
15	/RFDET	O	NRFDET output ("L" : detection)
16	CROSS	O	CROSS output (Track cross signal output)
17	OFTR	O	Off-track output("L" : ON track, "H" : OFF track)
18	VDET	O	VDET output("H" : Vibration detected)
19	ENV	O	RF envelope detection
20	ENVOFF	I	Not used, connected to power supply
21	TEBPF	I	Oscillation detect signal input
22	TEN	I	Tracking error signal input
23	TEOUT	O	Tracking error signal output
24	FEOUT	O	Focus error signal output
25	FEN	I	Focus error signal input
26	VREF	O	Reference voltage output
27	TBAL	I	Tracking balance signal input
28	FBAL	I	Focus balance signal input

• IC703 (AN8780SBE2) Focus coil / Tracking coil / Traverse motor / Spindle motor driver

Pin No.	Mark	I/O	Function
1	/RST	—	Not used, open
2	NC	—	Not used
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L" : ON)
5	NC	—	Not used
6	IN1	I	Motor driver (1) input
7	PVCC1	I	Power supply (1) for driver
8	PGND1	—	Ground connection (1) for driver
9	NC	—	Not used, connected to GND
10	D1-	O	Motor driver (1) reverse-action output
11	D1+	O	Motor driver (1) forward-action output
12	D2-	O	Motor driver (2) reverse-action output
13	D2+	O	Motor driver (2) forward-action output

Pin No.	Mark	I/O	Function
14	D3–	O	Motor driver (3) reverse-action output
15	D3+	O	Motor driver (3) forward-action output
16	D4–	O	Motor driver (4) reverse-action output
17	D4+	O	Motor driver (4) forward-action output
18	NC	—	Not used, open
19	PGND2P	—	Ground connection (2) for driver
20	PVCC2	I	Power supply (2) for driver
21	VCC	I	Power supply terminal
22	VREF	I	Reference voltage input
23	IN4	I	Motor driver (4) input
24	IN3	I	Motor driver (3) input
25	RSTIN	I	Reset terminal (Not used, connected to GND)
26	NC	—	Not used, connected to GND

• IC702 (MN662746RPK1) Servo processor / Digital signal processor / Digital filter / D/A converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Serial bit clock terminal (Not used, open)
2	LRCK	O	L/R discriminating signal (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Microprocessor command clock signal
8	MDATA	I	Microprocessor command data signal
9	MLD	I	Microprocessor command load signal
10	SENSE	O	Sense signal output
			(OFT,FESL,MAGEND,NAJEND,POSAD,SFG)
11	/FLOCK	O	Optical servo condition(focus)("L" : lead-in)
12	/TLOCK	O	Optical servo condition(tracking)("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	External clock signal input for sub-code Q
			register.
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H" : mute)
17	STAT	O	Status signal output
			(CRC,CUE,CLVS,TTSTVP,FCLV,SQCK)
18	/RST	I	Reset inputt
19	SMCK	O	1/2-divided clock signal of crystal oscillating at
			MSEL = "H" (fSMCK=8.4672MHz)
			1/4-divided clock signal of crystal oscillating at
			MSEL="L" (fSMCK=4.2336MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating
			(fPMCK=88.2kHz) (Not used, open)
21	TRV	O	Traverse servo control output
22	TVD	O	Traverse drive signal output
23	PC	O	Spindle motor ON signal output ("L" : ON)
24	ECM	O	Spindle motor drive signal output
			(forced mode output)
25	ECS	O	Spindle motor drive signal output
			(servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	D/A (drive) output (TVD,ECS,TRD,FOD,
			FBAL,TBAL) Reference voltage input.
30	FBAL	O	Focus balance adjustment output
			(Not used,open)
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)

Pin No.	Mark	I/O	Function
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H" : detection)
36	OFT	I	Off-track signal input ("H" : off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L" : detection)
39	BDO	I	Dropout signal input ("H" : Dropout)
40	LDON	O	Laser on signal output ("H" : ON)
41	TES	O	Tracking error shunt signal output ("H" : shunt)
42	PLAY	O	Play signal out ("H" : PLAY)
43	WVEL	O	Double speed status signal output ("H" : DS)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (Not used, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	DSLF	I/O	VCO loop filter (Not used, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (Not used, open)
53	PCK	O	PLL extraction clock ouput (Not used, open)
			(fPCK=4.321 MHz during normal playback)
54	TOUT	O	Phase comparison signal of EFM and PCK signals
			(Not used, open)
55	SUBC	O	Sub-code serial data output (Not used, open)
56	SBCK	I	Sub-code frame clock signal output
			(fCLDCK=7.35kHz during normal playback)
57	VSS	—	GND
58	X1 IN	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2 OUT	O	Crystal oscillating circuit output (f=16.9344MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (Not used, open)
62	/CLDCK	O	Clock input for sub-code serial data
			(Not used, open)
63	FCLK	O	Crystal frame clock signal output
			(fCLK=7.35kHz, double=14.7kHz)
64	PFLAG	O	Interpolation flag output ("H" : interpolation)
			(Not used, open)
65	FLAG	O	Flag output (Not used, open)
66	CLVS	O	Spindle servo phase synchronizing signal output
			("H" : CLV, "L" : rough servo) (Not used, open)
67	CRC	O	Sub-code CRC checked output
			("H" : OK, "L" : NG) (Not used, open)

Pin No.	Mark	I/O	Function
68	RESY	O	Frame resynchronizing signal output
			(Not used, open)
69	FLAG	O	De-emphasis ON signal output
			("H" : ON) (Not used, open)
70	ARST	I	Reset input through MASH circuit ("L" : Reset)
71	/TEST	I	Test input
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output

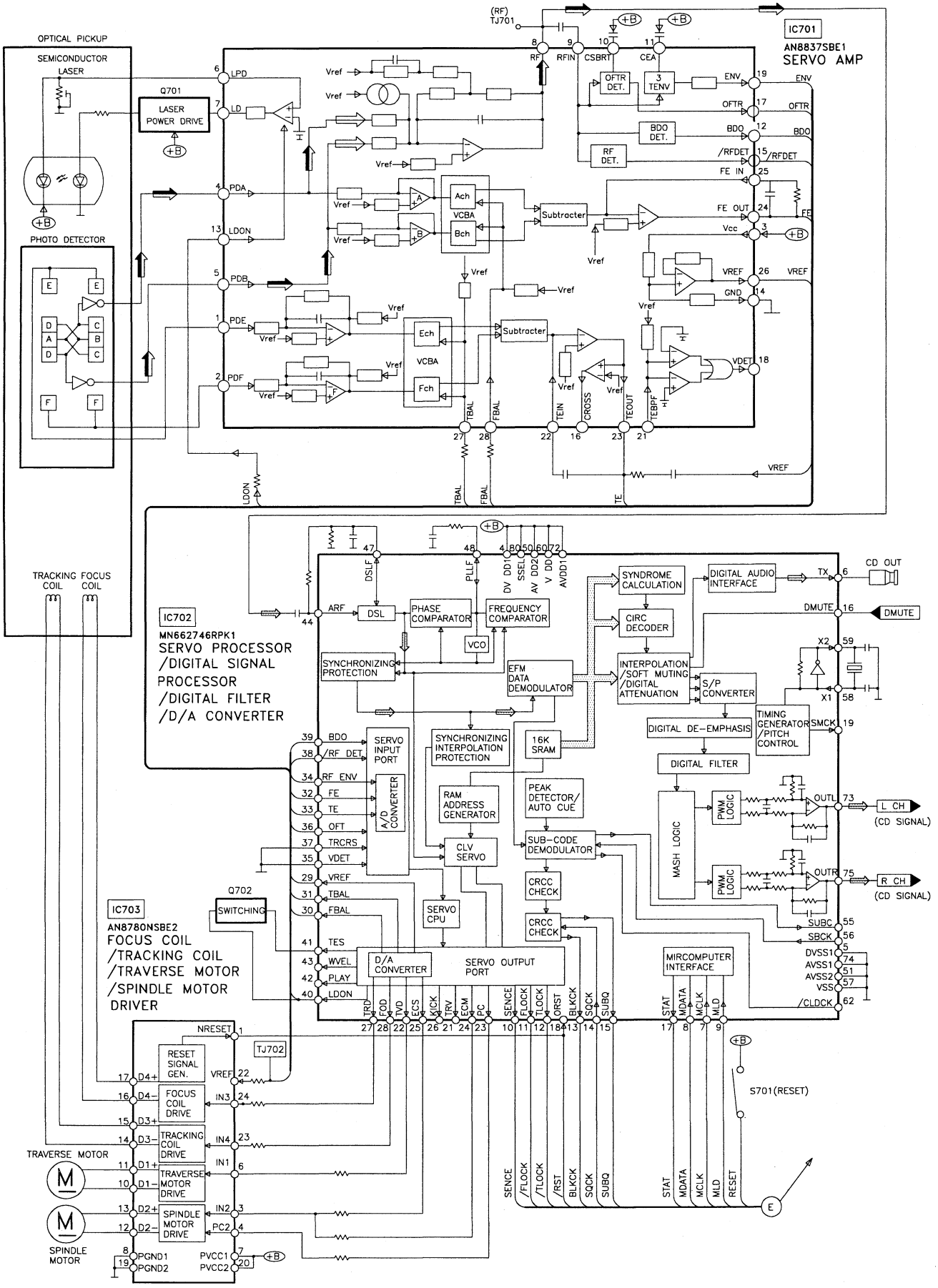
Pin No.	Mark	I/O	Function
76	RSEL	I	RF signal polarity assignment input
			(at "H" level, RSEL="H", at "L" level, RESL="L")
77	CSEL	I	Crystal oscillating frequency designation input
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal
			("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal
			"H" : SMCK=8.4672MHz
			"L" : MCK=4.2336MHz (Not used, open)

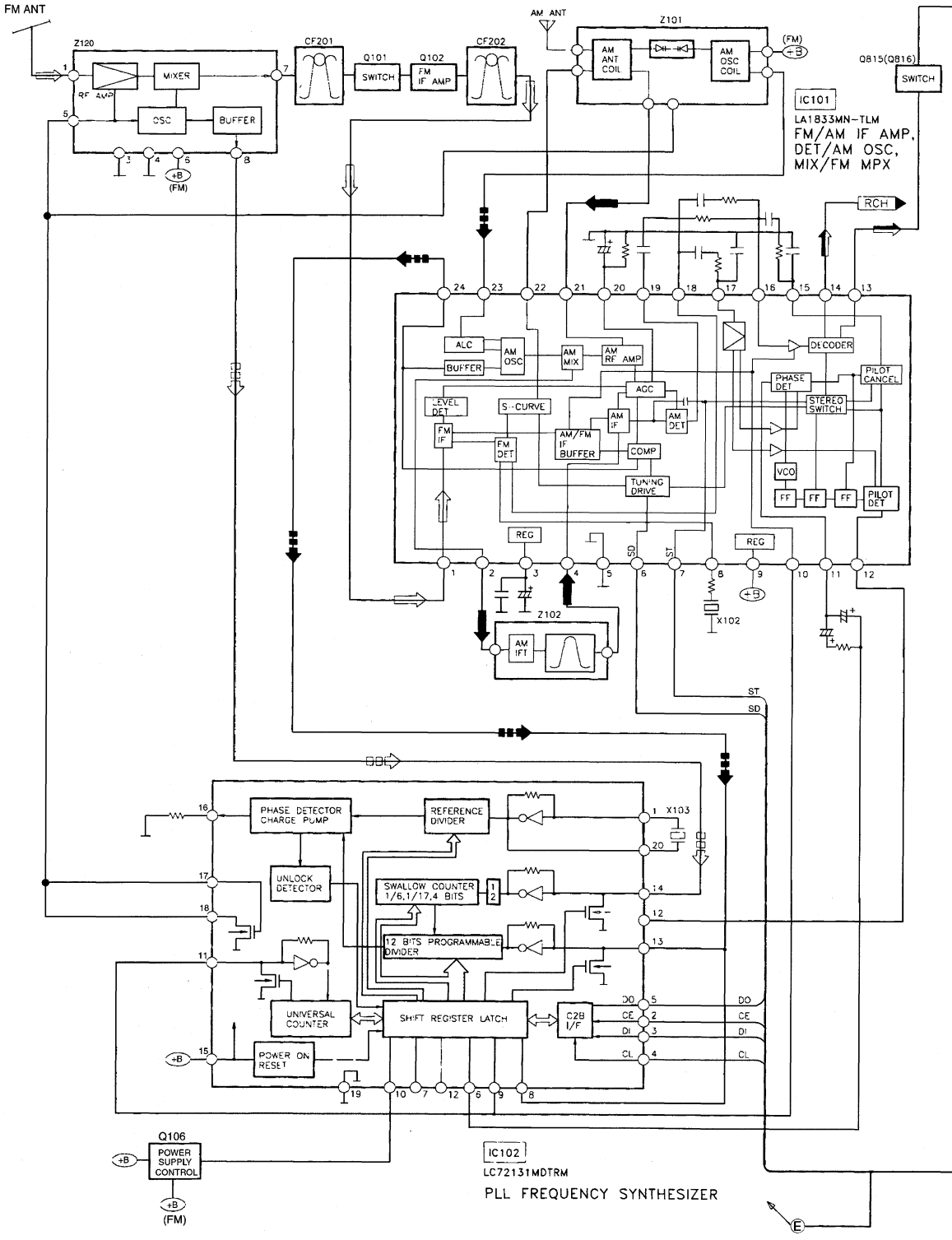
• IC801 (M38258M054FP) System Microprocessor

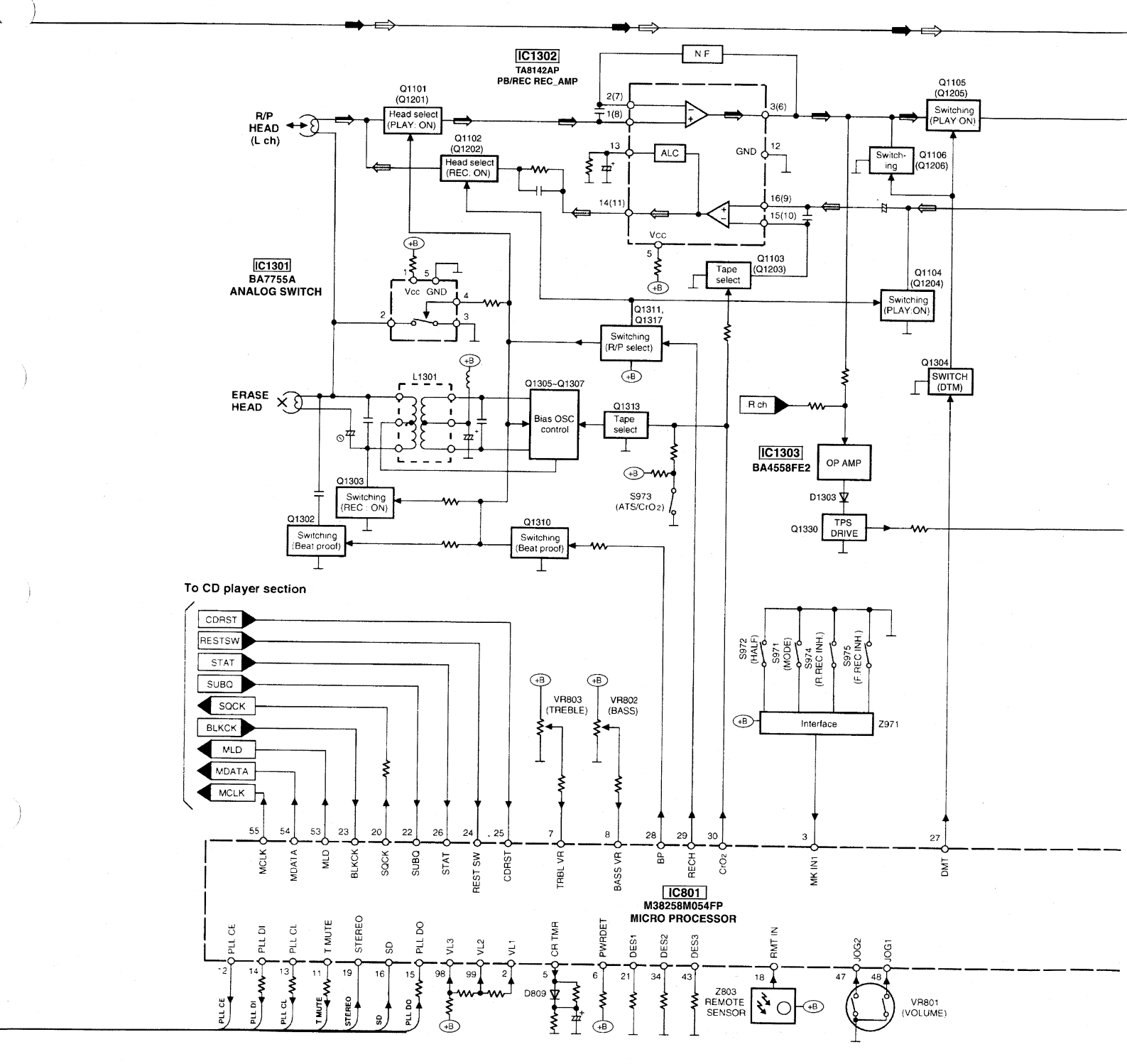
Pin No.	Mark	I/O	Function
1	N.C.	—	Not used
2	VL1	—	LCD power supply
3	DIMMER	I/O	DIMMER control signal output
4	DES	I/O	Destination setting terminal
5	CR_TMR	I/O	CR timer
6	PWRDET	I/O	Power detection signal input
7	CD CLS_SW	I/O	CD tray close detection SW (L:close)
8	MIC SW	I/O	MIC detection SW (H: there is MIC)
9	KEY 2	I/O	Key 2
10	KEY 1	I/O	Key 1
11	ASP_LATCH	I/O	ASP latch output
12	ASP_DATA	I/O	ASP data output
13	ASP CLK	I/O	ASP clock output
14	CD_CLOSE	I/O	CD tray close control output
15	PCNT	I/O	Power control output
16	CD_OPEN	I/O	CD tray open control output
17	SYNC	I/O	AC power drop detection
18	RMT_IN	I/O	Remote control signal input
19	N.C.	I/O	No connection
20	SQCK	I/O	CD subcode clock output
21	PMZ_L	I/O	PMZ(PM01)/PMV(PM05) switch (L:PMZ,
			H: PMV)
22	SUBQ	I/O	CD subcode data input
23	BLKCK	I/O	CD block clock input
24	MUTEA	I/O	Audio mute output (L: mute ON)
25	RESTSW	I/O	CD REST detect SW input
26	CDRST	I/O	CE reset output
27	STAT	I/O	CD signal processor status input
28	MLD	I/O	CD command load output
29	MDATA	I/O	CD command data output
30	MCLK	I/O	CD command clock output
31	JOG2	I/O	Volume jog dial input 2
32	JOG1	I/O	Volume jog dial input 1

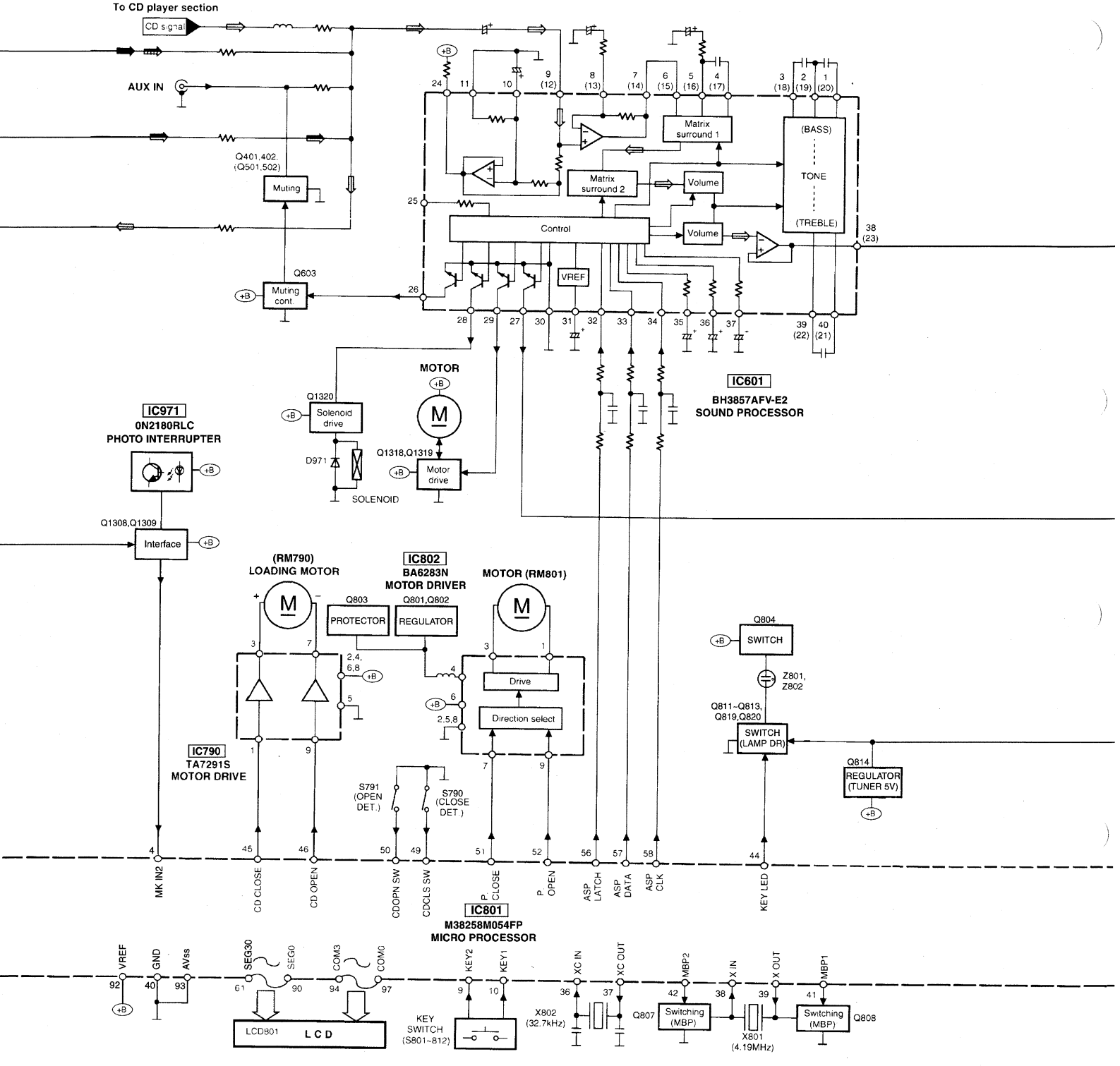
Pin No.	Mark	I/O	Function
33	SD	I/O	Tuner signal detect input
34	N.C.	—	Not used, connected to GND
35	RESET	—	RESET input
36	XCIN	—	X'tal oscillator (f = 32.768 kHz sub clock)
37	XCOUT	—	X'tal oscillator (f = 32.768 kHz sub clock)
38	XIN	—	X'tal oscillator (f = 6.0 MHz Main clock)
39	XOUT	—	X'tal oscillator (f = 6.0 MHz Main clock)
40	GND	—	Ground
41	MBP1	I/O	MPU beat proof output 1
42	MBP2	I/O	MPU beat proof output 2
43~49	N.C.	I/O	Not used, connected to GND
50	PLL	I/O	PLL count data
	DO/ST		STEREO input
51~52	N.C.	O	No connection
53	L_MUTE	O	Line out mute output
54	N.C.	O	No connection
55	T_MUTE	O	Tuner mute output (H: mute ON)
56	PLL_CL	O	PLL IC clock output
57	PLL_D1	O	Tuner PLL control data output
58	PLL_CE	O	Tuner PLL chip enable output
59~60	N.C.	O	No connection (LCD segment output)
61~90	SEG29~0	O	LCD segment output
91	VDD	—	Power supply (+5V)
92	VREF	—	Reference voltage for AD (VDD)
93	AVSS	—	Reference voltage for AD (VSS)
94	COM3	O	LCDcommon output
95	COM2	O	LCDcommon output
96	COM1	O	LCDcommon output
97	COM0	O	LCDcommon output
98	VL3	—	LCD bias setting
99	VL2	—	LCD bias setting
100	N.C.	—	Not used

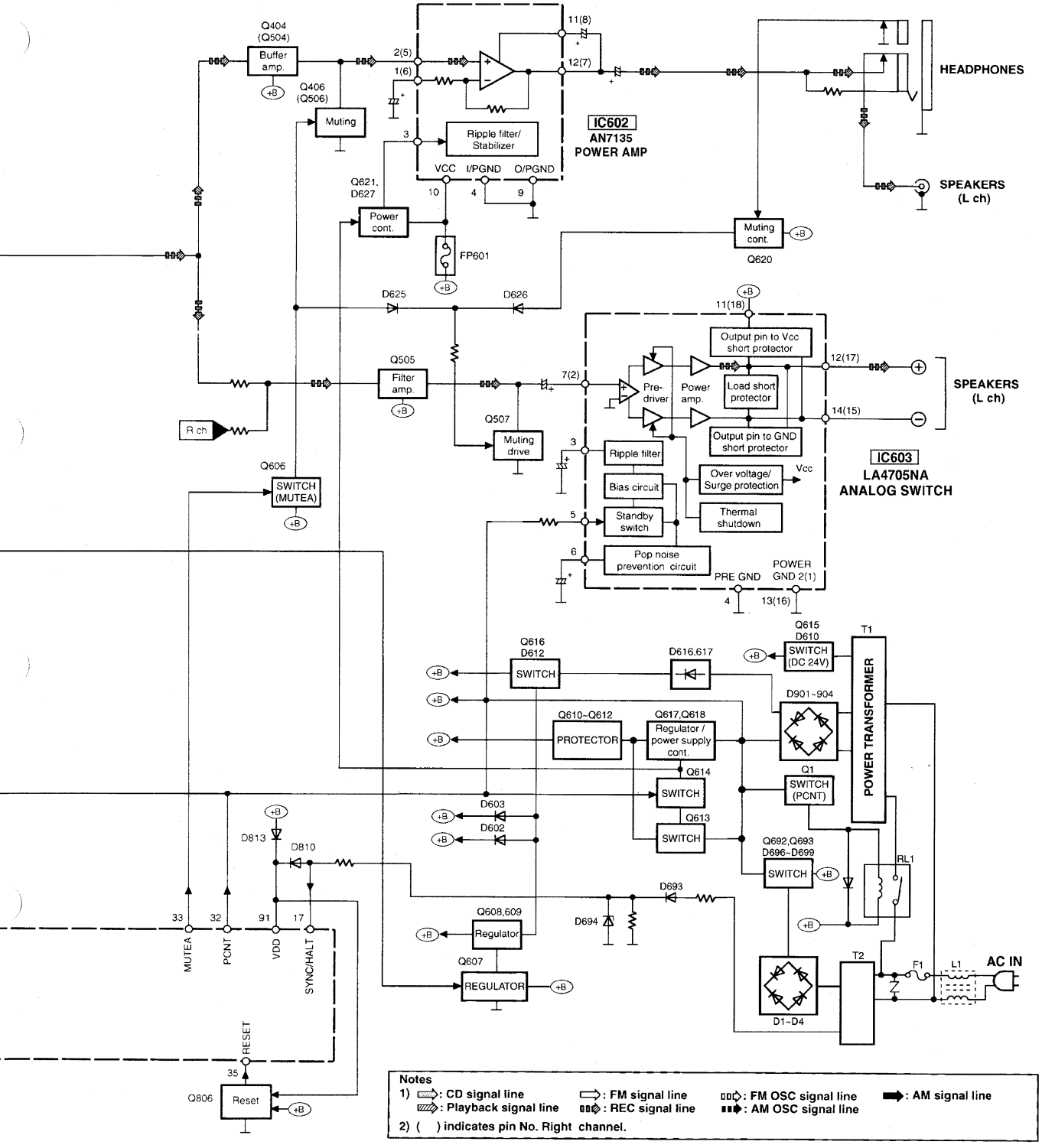
Block Diagram




FM ANT
AM ANT
Z120
CF201
Q101
SWITCH
Q102
FM IF AMP
CF202
Z101
AM ANT COIL
AM OSC COIL
(FM)
+B
Q815(Q816)
SWITCH
IC101
LA1833MN-TLM
FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
MIXER
RF AMP
OSC
BUFFER
RCH
ALC
AM OSC
BUFFER
AM MIX
AM RF AMP
DECODER
PHASE DET
PILOT CANCEL
LEVEL DET
S-CURVE
AGC
STEREO SWITCH
FM IF
FM DET
AM/FM IF BUFFER
AM IF
AM DET
COMP
TUNING DRIVE
VCO
FF
PILOT DET
REG
SD
ST
Z102
AM IFT
X102
PHASE DETECTOR CHARGE PUMP
REFERENCE DIVIDER
X103
UNLOCK DETECTOR
SWALLOW COUNTER 1/6,1/7,4 BITS
12 BITS PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
C2B I/F
DO
CE
DI
CL
POWER ON RESET
Q106
POWER SUPPLY CONTROL
IC102
LC72131MDTRM
PLL FREQUENCY SYNTHESIZER


IC1302
TA8142AP
PB/REC REC_AMP
NF
R/P HEAD (L ch)
Q1101 (Q1201)
Head select (PLAY: ON)
Q1102 (Q1202)
Head select (REC: ON)
ALC
GND
Q1105 (Q1205)
Switching (PLAY ON)
Switch-ing
Q1106 (Q1206)
Vcc
Tape select
Q1103 (Q1203)
Q1104 (Q1204)
Switching (PLAY ON)
IC1301
BA7755A
ANALOG SWITCH
Vcc GND
Q1311, Q1317
Switching (R/P select)
Q1304
SWITCH (DTM)
ERASE HEAD
L1301
Q1305~Q1307
Bias OSC control
Q1313
Tape select
R ch
IC1303
BA4558FE2
OP AMP
D1303
Q1330
TPS DRIVE
S973 (ATS/CrO2)
Q1303
Switching (REC: ON)
Q1302
Switching (Beat proof)
Q1310
Switching (Beat proof)
To CD player section
CDRST
RESTSW
STAT
SUBQ
SQCK
BLKCK
MLD
MDATA
MCLK
VR803 (TREBLE)
VR802 (BASS)
S972 (HALF)
S971 (MODE)
S974 (R REC INH)
S975 (F REC INH)
Interface
Z971
IC801
M38258M054FP
MICRO PROCESSOR
PLL CE
PLL DI
PLL CL
T MUTE
STEREO
SD
PLL DO
VL3
VL2
VL1
CR TMR
PWRDET
DES1
DES2
DES3
RMT IN
JOG2
JOG1
D809
Z803 REMOTE SENSOR
VR801 (VOLUME)


To CD player section
CD signal
AUX IN
Q401,402,
(Q501,502)
Muting
Q603
Muting cont.
Matrix surround 1
Matrix surround 2
Volume
Volume
Control
VREF
(BASS)
TONE
(TREBLE)
IC601
BH3857AFV-E2
SOUND PROCESSOR
MOTOR
Q1320
Solenoid drive
D971
SOLENOID
Q1318,Q1319
Motor drive
IC971
0N2180RLC
PHOTO INTERRUPTER
Q1308,Q1309
Interface
(RM790)
LOADING MOTOR
IC802
BA6283N
MOTOR DRIVER
Q803
PROTECTOR
Q801,Q802
REGULATOR
MOTOR (RM801)
Drive
Direction select
IC790
TA7291S
MOTOR DRIVE
S791
(OPEN DET.)
S790
(CLOSE DET.)
Q804
SWITCH
Z801,
Z802
Q811~Q813,
Q819,Q820
SWITCH
(LAMP DR)
Q814
REGULATOR
(TUNER 5V)
MK IN2
CD CLOSE
CD OPEN
CDOPN SW
CDCLS SW
P. CLOSE
P. OPEN
ASP LATCH
ASP DATA
ASP CLK
KEY LED
IC801
M38258M054FP
MICRO PROCESSOR
VREF
GND
AVss
SEG30
SEG0
COM3
COM0
KEY2
KEY1
XC IN
XC OUT
MBP2
X IN
X OUT
MBP1
LCD801
LCD
KEY
SWITCH
(S801~812)
X802
(32.7kHz)
Q807
Switching
(MBP)
X801
(4.19MHz)
Switching
(MBP)
Q808


Q404
(Q504)
Buffer amp.
+B
Q406
(Q506)
Muting
2(5)
1(6)
11(8)
12(7)
IC602
AN7135
POWER AMP
HEADPHONES
SPEAKERS
(L ch)
3
Ripple filter/
Stabilizer
VCC I/PGND O/PGND
10 4 9
Q621,
D627
Power cont.
FP601
Muting cont.
Q620
D625
D626
11(18)
Output pin to Vcc short protector
Q505
Filter amp.
7(2)
Pre-driver
Power amp.
Load short protector
12(17)
14(15)
SPEAKERS
(L ch)
R ch
Q507
Muting drive
Output pin to GND short protector
3
Ripple filter
IC603
LA4705NA
ANALOG SWITCH
Q606
SWITCH
(MUTEA)
Bias circuit
Over voltage/
Surge protection
Vcc
5
Standby switch
Thermal shutdown
6
Pop noise prevention circuit
PRE GND
POWER GND 2(1)
4
13(16)
Q615
D610
SWITCH
(DC 24V)
T1
POWER TRANSFORMER
Q616
D612
SWITCH
D616,617
D901~904
Q610~Q612
PROTECTOR
Q617,Q618
Regulator /
power supply
cont.
Q614
SWITCH
Q1
SWITCH
(PCNT)
D603
D602
Q613
SWITCH
Q692,Q693
D696~D699
SWITCH
RL1
D813
D810
D693
D694
Q608,609
Regulator
Q607
REGULATOR
T2
F1
L1
AC IN
D1~D4
33
32
91
17
MUTEA
PCNT
VDD
SYNC/HALT
RESET
35
Q806
Reset
Notes
1) : CD signal line
: Playback signal line
: FM signal line
: REC signal line
: FM OSC signal line
: AM OSC signal line
: AM signal line
2) ( ) indicates pin No. Right channel.

Schematic Diagram

		Page
A	CD SERVO CIRCUIT	29 - 30
B	CASSETTE DECK CIRCUIT	31
C	MECHANISM CIRCUIT	31
D	CONTROL CIRCUIT	31 - 32
E	MOTOR CIRCUIT	32
F	TUNER PACK CIRCUIT	31
G	SENSOR CIRCUIT	32
H	TIMER CIRCUIT	32
I	CD OPERATION CIRCUIT	32
J	VOLUME CIRCUIT	32
K	TUNER BAND CIRCUIT	32
L	CASSETTE EJECT CIRCUIT	32
M	CASSETTE CIRCUIT	32
N	LOADING MOTOR CIRCUIT	32
O	MAIN CIRCUIT	32
P	POWER CIRCUIT	32

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

- S701 : CD rest switch
- SW790 : CD tray open detect switch
- SW791 : CD tray close detect switch
- SW801 : Tuner/band select switch (TUNER/BAND)
- SW802 : Tuning mode select switch (TUNR MODE)
- SW803 : Memory switch (MEMORY)
- SW804 : Record/record pause switch (●/II REC/REC PAUSE)
- SW805 : Rewind TPS switch (REW/TPS)
- SW806 : Fast forward switch (FF/TPS)
- SW807 : AUX switch (AUX)
- SW808 : Cassette stop switch (■)
- SW809 : Cassette play/direction switch (◄►)
- SW810 : Cassette holder open switch (⏏)
- SW811 : Tuning/time adjust switch (TUNE/TIME ADJ DOWN/–)
- SW812 : Tuning/time adjust switch (TUNE/TIME ADJ UP/+)
- SW813 : Glide panel open/close switch (OPEN/CLOSE)
- SW814 : Clock/timer switch (CLOCK/TIMER)
- SW815 : Play timer/record timer switch (◴PLAY/◴REC)
- SW816 : Power switch (⏻/I)
- SW817 : Auto off switch (AUTO OFF)
- SW818 : CD edit switch (CD EDIT)
- SW819 : Skip/search switch (I◄◄)
- SW820 : Skip/search switch (►►I)
- SW821 : CD stop switch (■)
- SW822 : CD play/pause switch (►/II)
- SW823 : CD tray open/close switch (⏏OPEN/CLOSE)
- D808 : AC IN indicator (–AC IN)
- VR801 : Volume control VR (VOLUME)
- VR802 : Bass control VR (BASS)
- VR803 : Treble control VR (TREBLE)

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

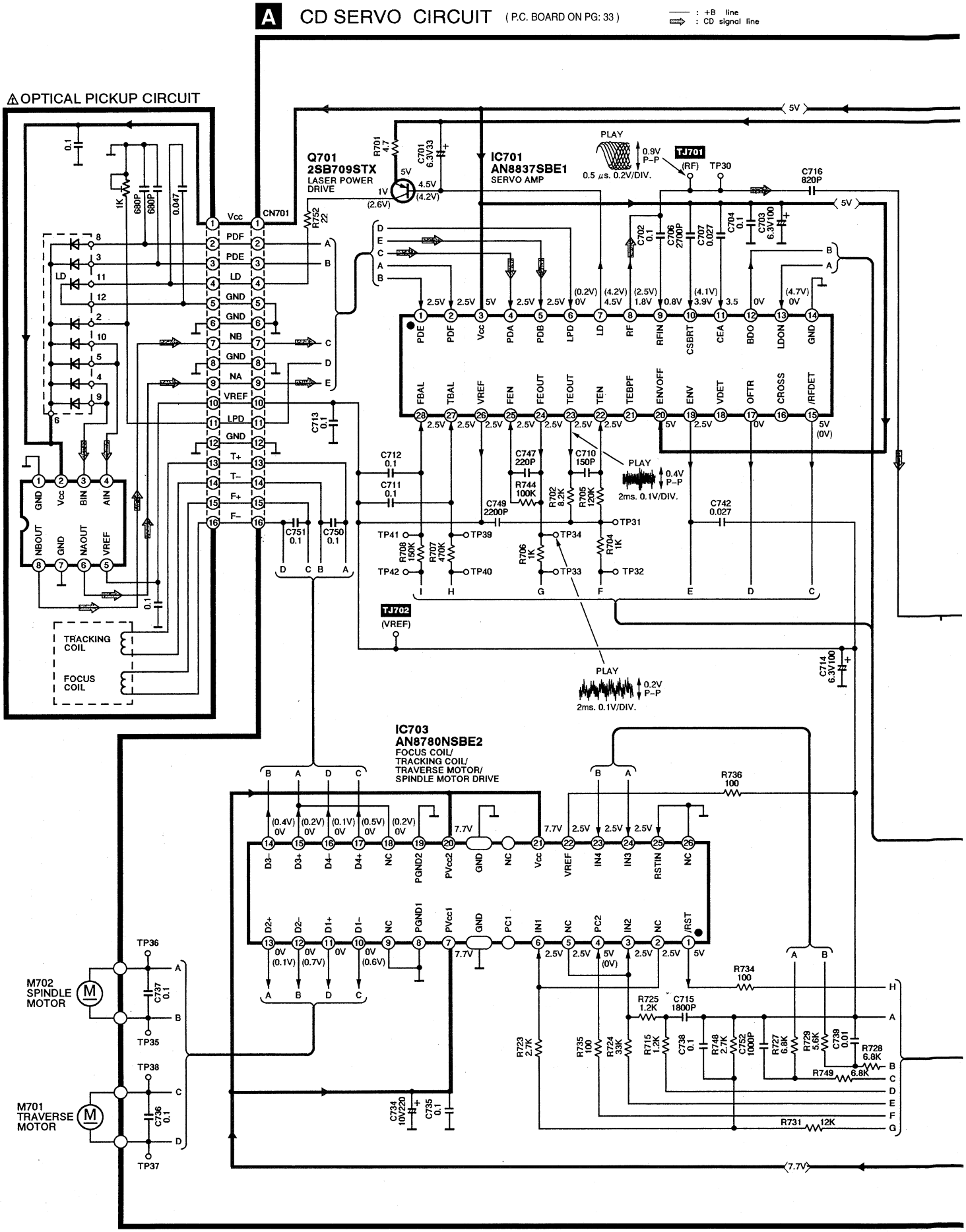
No mark : TAPE PLAYBACK ( ) : AM < > : FM (( )) : CD PLAYBACK

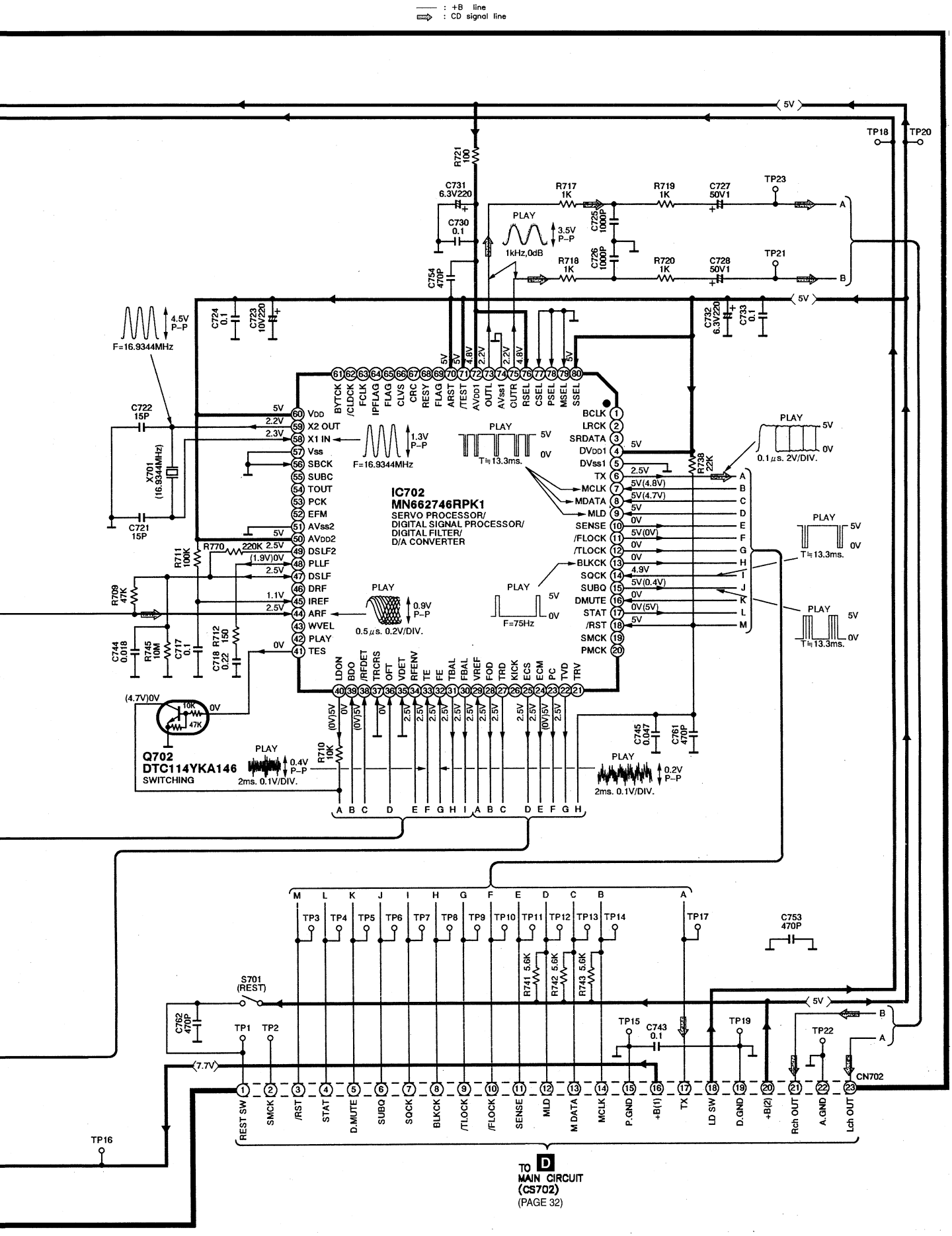
- **Importance safety notice:**
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.
- Put a conductive mat on the work table.


A CD SERVO CIRCUIT (P.C. BOARD ON PG: 33)
: +B line
: CD signal line
⚠OPTICAL PICKUP CIRCUIT
Q701
2SB709STX
LASER POWER DRIVE
IC701
AN8837SBE1
SERVO AMP
IC703
AN8780NSBE2
FOCUS COIL/
TRACKING COIL/
TRAVERSE MOTOR/
SPINDLE MOTOR DRIVE
CN701
TRACKING COIL
FOCUS COIL
M702
SPINDLE MOTOR
M701
TRAVERSE MOTOR
TJ701
(RF)
TJ702
(VREF)
PLAY
0.9V P-P
0.5 μs. 0.2V/DIV.
0.4V P-P
2ms. 0.1V/DIV.
0.2V P-P
2ms. 0.1V/DIV.
5V
7.7V


: +B line
: CD signal line
IC702
MN662746RPK1
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/
D/A CONVERTER
Q702
DTC114YKA146
SWITCHING
S701
(REST)
TO D
MAIN CIRCUIT
(CS702)
(PAGE 32)

B CASSETTE DECK CIRCUIT
(P.C.BOARD ON PAGE 37)

Lch
Rec/Play
Rch
Erase Head
CP1301

Q1201 2SJ498CTA HEAD SELECT (PLAY:ON)
Q1101 2SJ498CTA HEAD SELECT (PLAY:ON)
Q1102 2SJ498CTA HEAD SELECT (REC:ON)
Q1202 2SJ498CTA HEAD SELECT (REC:ON)

IC1302 TA8142AP PB/REC PRE AMP IC
Rch
Lch
PBIN N PBOU VCC R. PBOU N PBIN
RECIN NF RECOUT GND AGC RECOUT NF RECIN

Q1203 2SC1740SRTA TAPE SELECT
Q1103 2SC1740SRTA TAPE SELECT
Q1313 2SC1740SRTA TAPE SELECT

IC1303 BA4558FE2 OP AMP IC
Q1330 2SC1740SRTA TPS DRIVE
D1303 RVD1SS133TA

Q1205 2SJ498CTA SWITCHING (PLAY:ON)
Q1105 2SJ498CTA SWITCHING (PLAY:ON)
Q1206 RVTDTC124TST SWITCHING
Q1106 RVTDTC124TST SWITCHING
Q1304 RVTDTC114TST SWITCHING DTM
Q1204 2SC1740SRTA SWITCHING (PLAY:ON)
Q1104 2SC1740SRTA SWITCHING (PLAY:ON)

IC1301 BA7755A ANALOG SW ITCH IC
H=OFF
vcc

Q1317 RVTDTA143XST SWITCHING (R/P SELECT)
Q1311 RVTDTC143XST SWITCHING (R/P SELECT)
Q1310 RVTDTC114EST SWITCHING BP
Q1309 2SC1740SRTA INTERFACE
Q1308 2SC1740SRTA INTERFACE
Q1305 2SC1740SRTA BIAS OSC CONTROL
Q1306 2SC1740SRTA BIAS OSC CONTROL
Q1307 2SC1740SRTA BIAS OSC CONTROL
Q1303 2SC2001LTA SWITCHING (REC:ON)
Q1302 2SC1845FTA SWITCH(BEAT PROOF)
Q1319 2SD965RTA MOTOR DRIVE
Q1318 RVTDTA143XST MOTOR DRIVE
Q1320 2SB1090RTA SOLENOID DRIVE

L1303 RLQA470JT1-Y
L1301 RL08B003-K
D1301 RVD1SS133TA

CS1301
PL_L
MOTOR_L
MOTOR_GND
MOTOR_9V
9V (D9V)
9V_GND
PB_LCH / REC_IN
PB_RCH / REC_IN
AF_GND
TO A MAIN CIRCUIT (PW1301) (PAGE 32)

VREF+
VREF-
AN7
AN7_MK_IN1
AN6
AN6_MK_IN2
DMT
BP
RECH
CRO2
PW1303
TO D CONTROL CIRCUIT (CS1301) (PAGE 32)

W1981
M

CP1902
CS971
PL
GND
AN7
VREF
VREF
PHOTO
D971 MAISTA
METAL
CRO2
RECINH_F
MODE
RECINH_R
HALF
S975 S976 S977 S974 S972

IC971 ON2180RLC PHOTO INTERRUPTOR
Z971 EXBF7L355YV RADA RESISTOR

C MECHANISM CIRCUIT
(P.C.BOARD ON PAGE 39)

R1305 1.5K

R1325 5.6K

BPL

CP1902

CS971

VREF+
AD_OUT
RECINH_F
MODE
RECINH_R
HALF
VREF-

D971 MA165TA PL

R972 820

METAL
CRC2
RECINH_F
MODE
RECINH_R
HALF

S973 S975 S974 S976 S972

IC971 ON2180RLC PHOTO INTERRUPTOR

R973 39K

Z971

Z971 EXBF7L355SYV RADA RESISTOR

W1981

C1315 16V10

Q1320 2SB1200RTA SOLENOID DRIVE

R1337 27K

R1338 3.3K

R1399 1K

Q1319 2SD965RTA MOTOR DRIVE

R1336 680

Q1318 RVTDTA143XST MOTOR DRIVE

C MECHANISM CIRCUIT
(P.C.BOARD ON PAGE 39)

D CONTROL CIRCUIT(TUNER)
(P.C.BOARD ON PAGE 36)

F TUNER PACK CIRCUIT
(P.C.BOARD ON PAGE 38)

FM EXT ANT 75 OHM

JK101

AM LOOP

AM EXT ANT

L101 0.68UH

L102 0.68UH

Z120 ENV17290G1Y

Z101 AM ANT COIL

AM OSC COIL

2SK238

2SK360

2SC2620

2SC2996

HVM27

IFT

100uF 16V

RLFFETNGD01L CF201

CF202 RLFFETMGD01L

Q101 2SC2787LTA SWITCHING

Q102 2SC2787LTA AMPLIFIER FM IF

Q106 RVTDTA114EST POWER SUPPLY SWITCH

IC101 LA1833MN-TLM IF & MPX IC (TUNER)

FM IF in
AM MIX out
REG
AM IF in
GND
SD
ST
FM DET
Vcc
STR
FM/AM
Mono

Z102 RLI2Z006M-T

X102 RLFDT1300D

IC102 LC72131MDTBM

Xout
VS
AOUT
AIN
PD
VDD
FMIN
AMIN
MONO
IFIN

D101 MTZJ5R1BTA

TO D CONTROL CIRCUIT (PAGE 32) (A)

SD
STEREO
15V
CL
DO
DI
L ch
CE
R ch

D CONTROL CIRCUIT(TUNER)
(P.C.BOARD ON PAGE 36)

F TUNER PACK CIRCUIT
(P.C.BOARD ON PAGE 38)

Z120
ENV17290G1Y

FM EXT ANT
75 OHM

JK101

AM LOOP

AM EXT ANT

L101 0.68UH

L102 0.68UH

Z101
AM ANT COIL

AM OSC COIL

2SK238

HVM27

2SC2620

IFT

RLFEETNGD01L
CF201

CF202
RLFFETMGD01L

Q101
2SC2787LTA
SWITCHING

Q102
2SC2787LTA
AMPLIFIER
FM IF

2SK360

2SC2996

Q106
RVTDTA114EST
POWER SUPPLY
SWITCH

IC101
LA1833MN-TLM
IF & MPX IC
(TUNER)

IC102
LC72131MDTRM
PLL IC (TUNER)

Z102
RLI2Z006M-T

X101
RLFDFT430D

X103
RSXD7M20C01

D101
MTZJ5R1B7A

SD
STEREO
15V
CL
DO
DI
L ch
CE
R ch

TO D CONTROL CIRCUIT (PAGE 32) (A)

D CONTROL CIRCUIT
(P.C.BOARD ON PAGE 36)

E MOTOR CIRCUIT
(P.C.BOARD ON PAGE 38)

TO D CONTROL (TUNER) (A) (PAGE 31)

TO B CASSETTE DECK CIRCUIT (PW1303) (PAGE 31)

TO B CASSETTE DECK CIRCUIT (CS1301) (PAGE 31)

O MAIN CIRCUIT
(P.C.BOARD ON PAGE 34, 35)

G SENSOR CIRCUIT
(P.C.BOARD ON PAGE 39)

H TIMER CIRCUIT
(P.C.BOARD ON PAGE 39)

I CD OPERATION CIRCUIT
(P.C.BOARD ON PAGE 39)

TO J VOLUME CIRCUIT (CW802)

M CASSETTE CIRCUIT
(P.C.BOARD ON PAGE 38)

L CASSETTE EJECT CIRUIT
(P.C.BOARD ON PAGE 38)

K TUNER BAND CIRUIT
(P.C.BOARD ON PAGE 38)

N LOADING MOTOR
(P.C.BOARD ON PAGE 39)

P POWER CIRC
(P.C.BOARD ON

IC801
M38258M054FP
MICRO PROCESSOR

Q806
RVTDTC144EST
RESET

Q807
2SC1740SRTA
SWITCHING
(MBP)

Q808
2SC1740SRTA
SWITCHING
(MBP)

Q504
2SC1740SLNST
BUFFER AMP

Q505
2SC1740SLNST
FILTER AMP

Q404
2SC1740SLNST
BUFFER AMP

Q406
2SC1740SRTA
MUTING

Q506
2SC1740SRTA
FILTER AMP

IC602
AN7135
POWER AMP

IC603
LA4705NA
ANALOG SWITCH
IC

IC790
TA7291S
MOTOR DRIVE

Q610
2SB1566E
REGULAOR

Q612
RVTDTA143TST
PROTECTOR

Q611
2SC1740SRTA
REGULATOR

Q606
RVTDTA114EST
SWITCHING
(MUTE A)

Q618
RVTDTC114EST
REGULATOR
(PROTECTOR)

Q614
RVTDTC114EST
SWITCHING(PCNT)

Q507
2SC2001LTA
MUTING DRIVE

Q617
RVTDTA114EST
REGULATOR
(PROTECTOR)

Q613
RVTDTA114YST
SWITCHING

Q620
2SC1740SRTA
SWITCHING

Q621
RVTDTA114EST
POWER CONT.

Q61
2SD592ARTA
SWITCHING

Q615
2SD2037ETA
SWITCHING (DC24V)

Q693
2SD592ARTA
SWITCHING

Q692
2SD592ARTA
SWITCHING(DC 5.9V)

D901-904
1N5402BM21

G SENSOR CIRCUIT
(P.C.BOARD ON PAGE 39)

H TIMER CIRCUIT
(P.C.BOARD ON PAGE 39)

I CD OPERATION CIRCUIT
(P.C.BOARD ON PAGE 39)

M CASSETTE CIRCUIT
(P.C.BOARD ON PAGE 38)

L CASSETTE EJECT CIRUIT
(P.C.BOARD ON PAGE 38)

K TUNER BAND CIRUIT
(P.C.BOARD ON PAGE 38)

N LOADING MOTOR CIRCUIT
(P.C.BOARD ON PAGE 39)

J VOLUME CIRCUIT
(P.C.BOARD ON PAGE 38)

P POWER CIRCUIT
(P.C.BOARD ON PAGE 33)

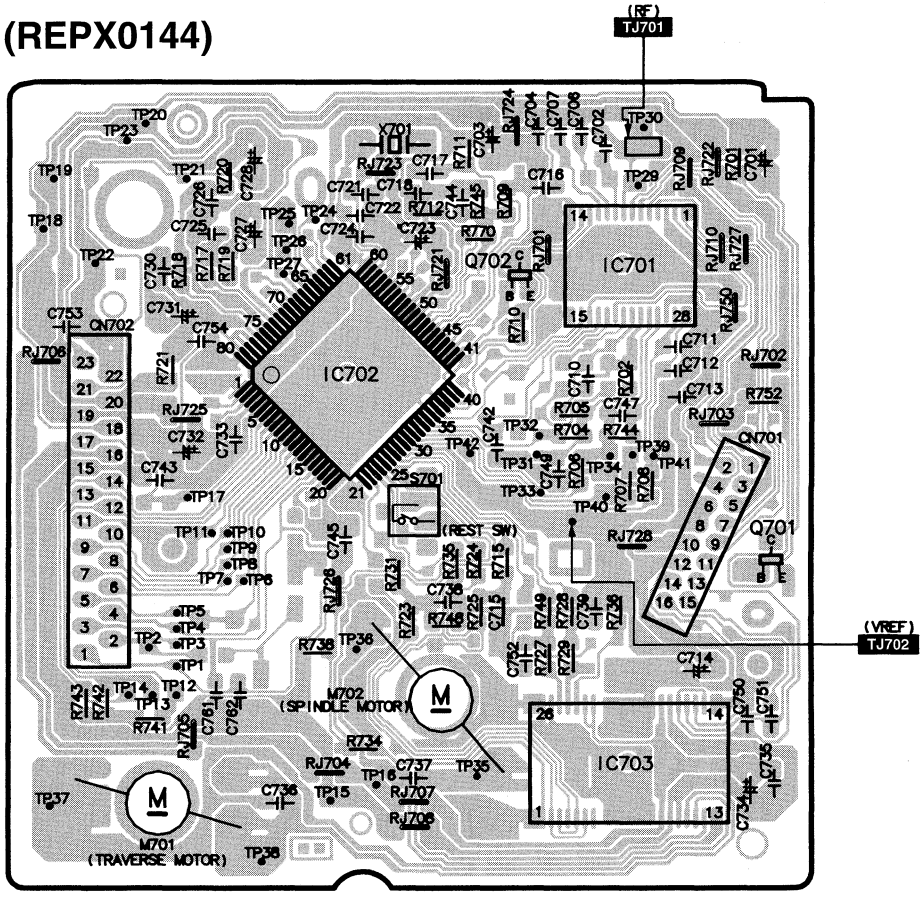
TO A CD SERVO CIRCUIT (CN702) (PAGE 29)

TO J VOLUME CIRCUIT (CW802)

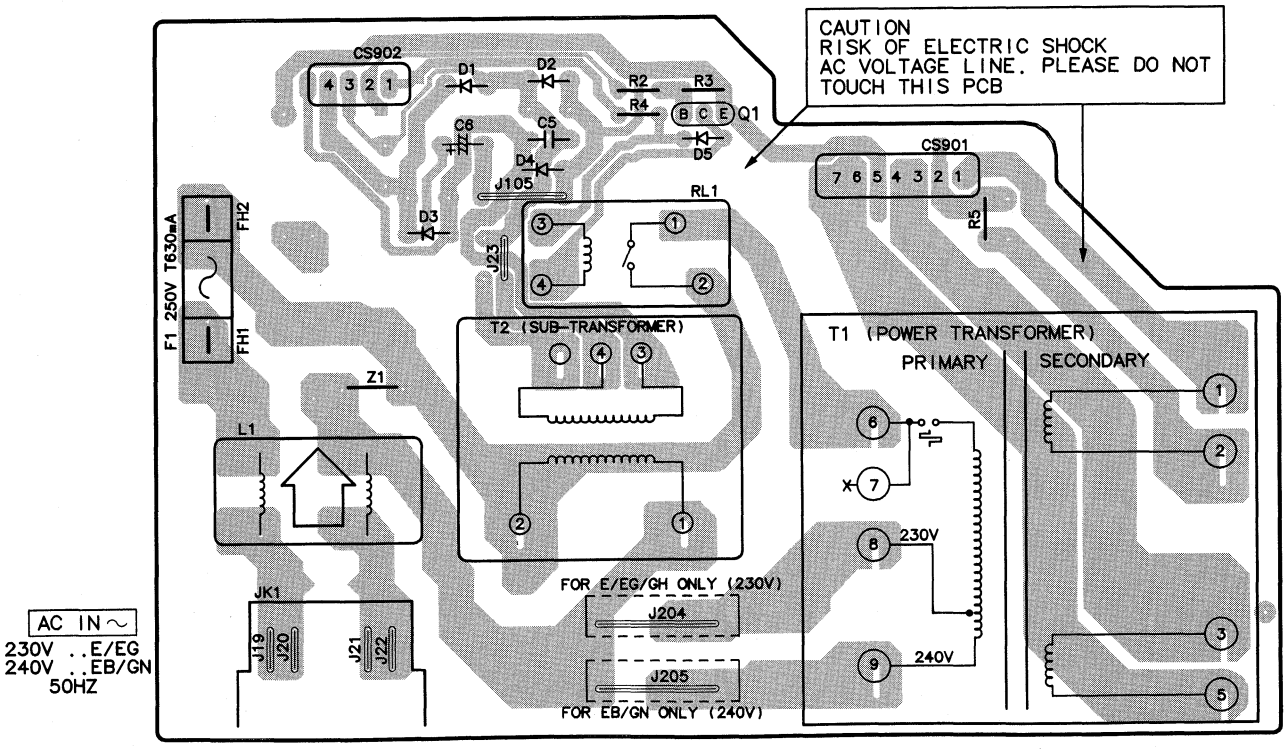
TO D CONTROL CIRCUIT (CP802)

■ Printed Circuit Board

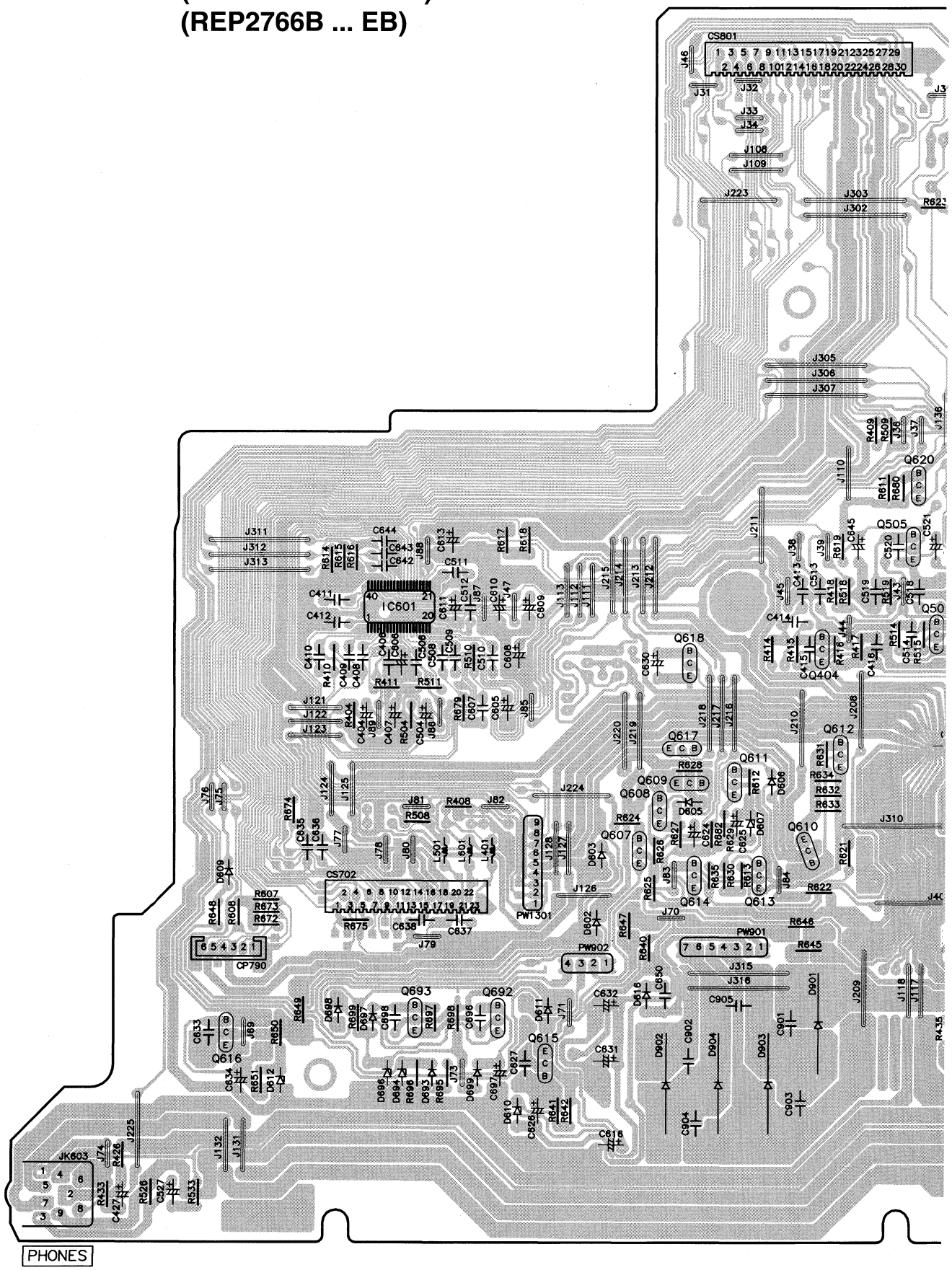
A SERVO P.C.B. (REPX0144)



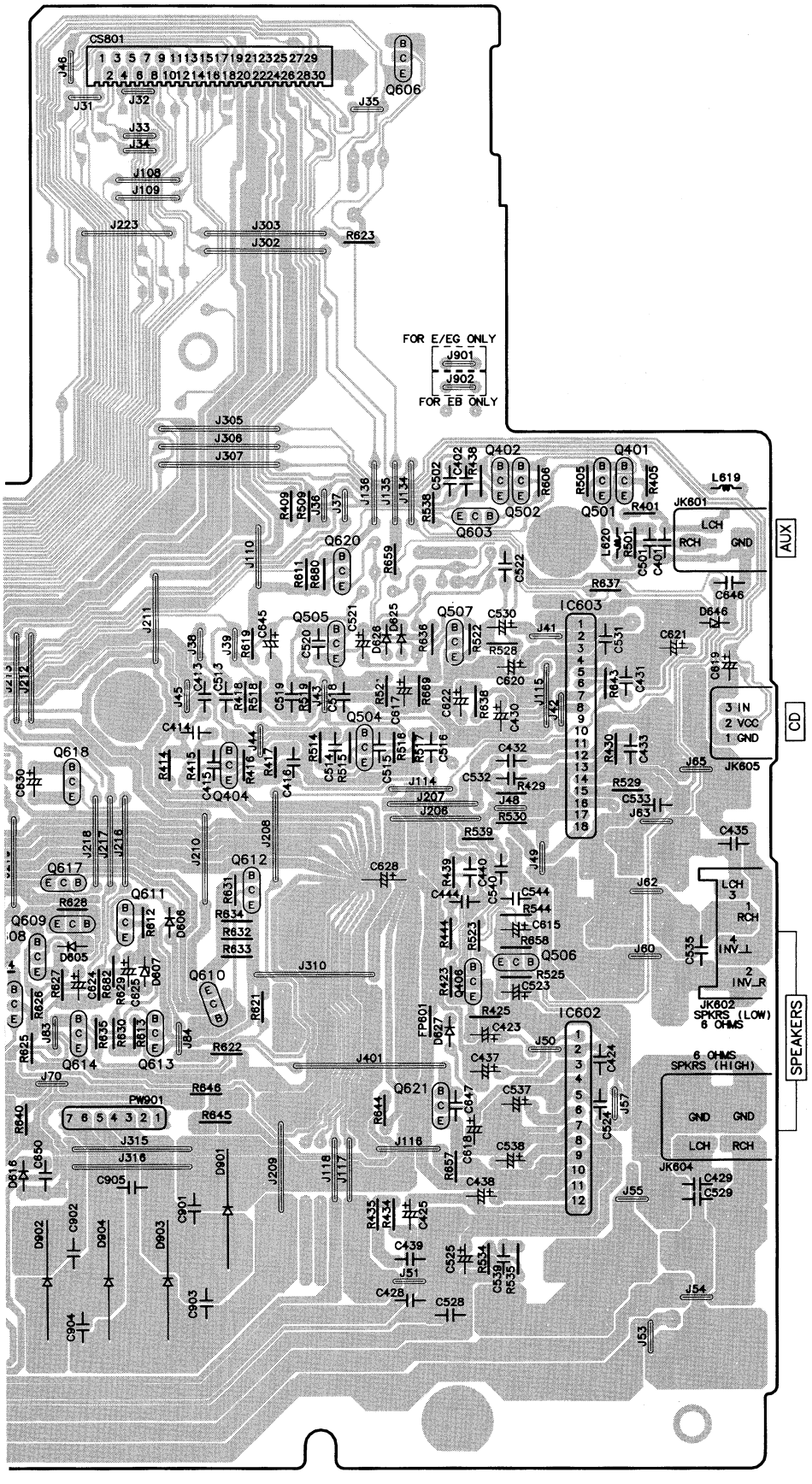
P POWER P.C.B. (REP2766A ... E/EG)
(REP2766B ... EB)



MAIN P.C.B. (REP2766A ... E/EG)
(REP2766B ... EB)



F G H I J K L

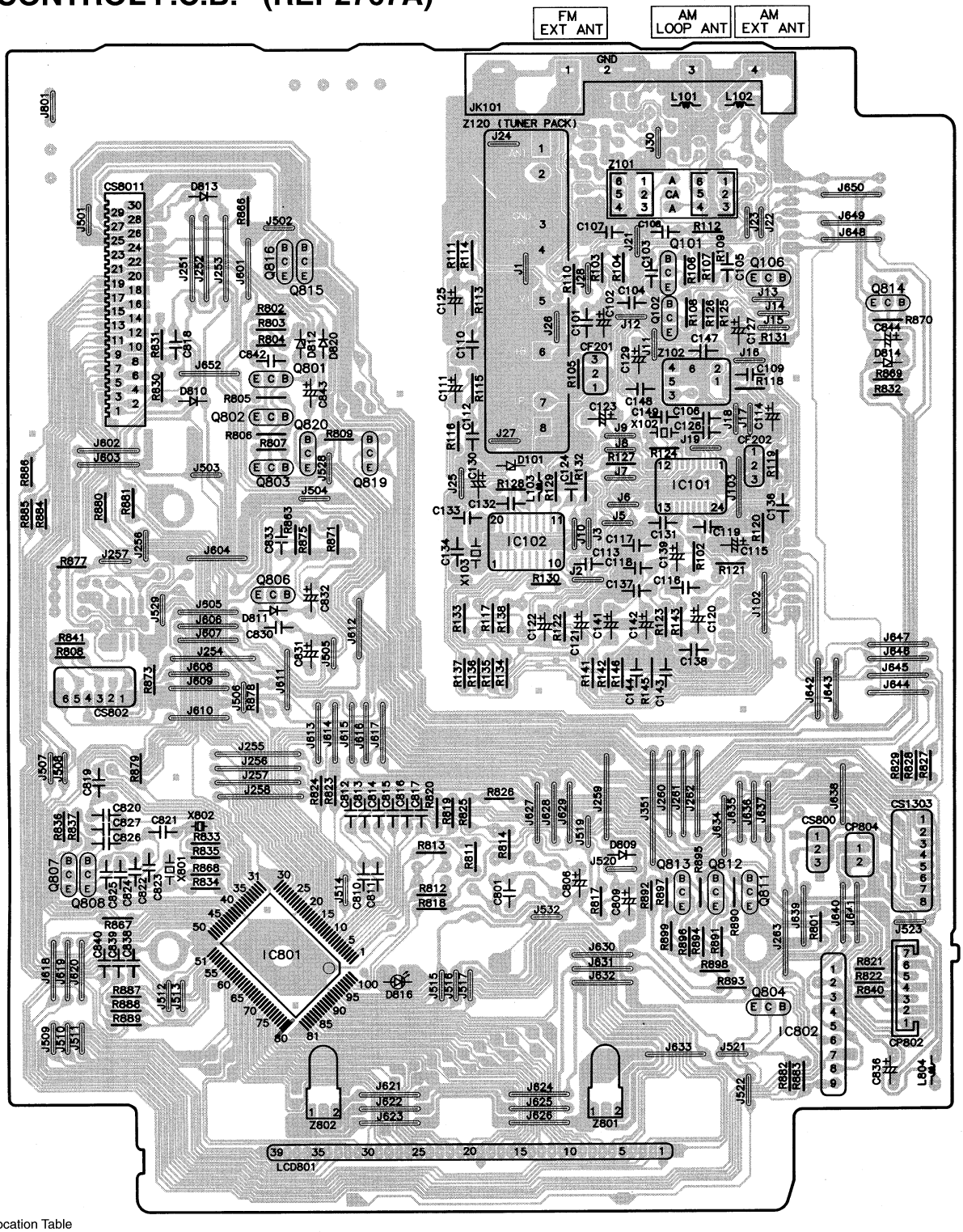


Parts Location Table

Ref No.	Loc. No.
CP790	C8
CS702	D8
CS801	F1
D602	E8
D603	E7
D605	F7
D606	F7
D607	F7
D609	C7
D610	E9
D611	E8
D612	C9
D616	F8
D625	H5
D626	H5
D627	H7
D646	J5
D693	D9
D694	D9
D696	D9
D697	D8
D698	C8
D699	D9
D901	G8
D902	F9
D903	F9
D904	F9
FP601	H7
IC601	D5
IC602	I8
IC603	I5
JK601	J4
JK602	J7
JK603	A10
L401	D7
L403	-
L404	-
L501	D7

Ref No.	Loc. No.
L502	-
L503	-
L504	-
L601	D7
L608	-
L619	J4
L620	I4
PW1301	E7
PW902	E8
Q401	I4
Q402	I4
Q404	G6
Q406	H7
Q501	I4
Q502	I4
Q504	H6
Q505	G5
Q506	I7
Q507	I5
Q603	H4
Q606	H1
Q607	F7
Q608	F7
Q609	F7
Q610	G7
Q611	F7
Q612	G6
Q613	G7
Q614	F7
Q615	E9
Q616	C8
Q617	F6
Q618	F6
Q620	G4
Q621	H8
Q692	D9
Q693	D9

D CONTROL P.C.B. (REP2767A)



Parts Location Table

Ref No.	Loc. No.
CF201	E3
CF202	F4
CP802	G8
CP804	G7
CS1303	G7
CS800	F7
CS8011	B3
CS802	B5

Ref No.	Loc. No.
D101	D4
D809	E7
D810	B3
D811	C5
D812	C3
D813	B2
D814	G3
D816	D7

Ref No.	Loc. No.
D820	C3
IC101	E4
IC102	D4
IC801	C7
IC802	F7
JK101	F1
L101	F1
L102	F1

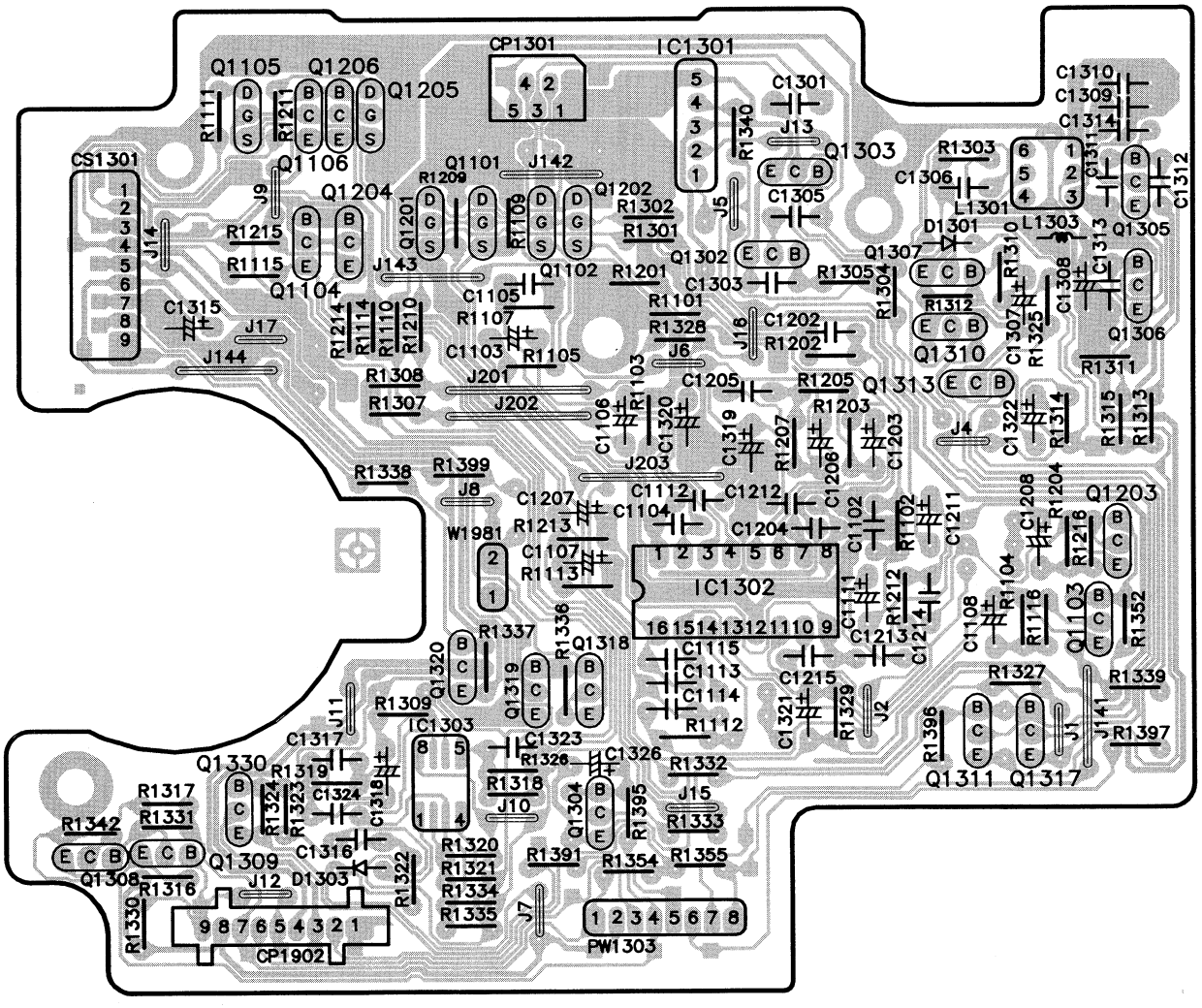
Ref No.	Loc. No.
L103	E4
L804	G8
Q101	E3
Q102	E3
Q106	F3
Q801	C3
Q802	C4
Q803	C4

Ref No.	Loc. No.
Q804	F8
Q806	C5
Q807	B7
Q808	B7
Q811	F7
Q812	F7
Q813	F7
Q814	G3

Ref No.	Loc. No.
Q815	C3
Q816	C3
Q819	C4
Q820	C4
X102	E4
X103	D5
X801	B7
X802	B6

Ref No.	Loc. No.
Z101	F2
Z102	F3
Z120	E3

B CASSETTE DECK P.C.B. (REP2766A ... E/EG)
(REP2766B ... EB)

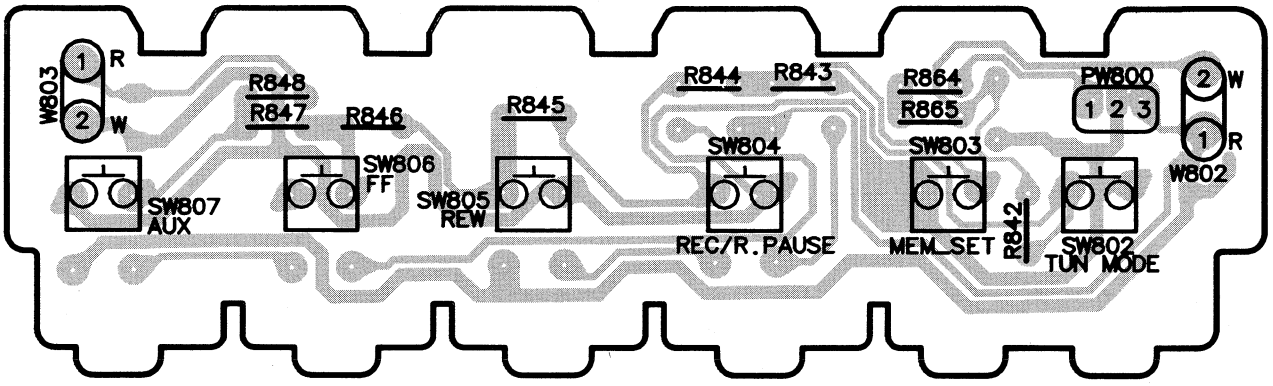


Parts Location Table

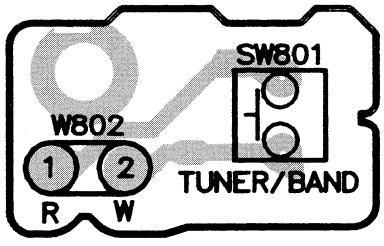
Ref No.	Loc. No.
CP1301	D2
CP1902	C7
CS1301	B3
D1301	F3
D1303	C6
IC1301	E2
IC1302	E5
IC1303	C6
L1301	G3
L1303	C3
PW1303	E7
Q1101	D3
Q1102	D3
Q1103	G5
Q1104	C3
Q1105	B2
Q1106	C2
Q1201	C3
Q1202	D3
Q1203	G5

Ref No.	Loc. No.
Q1204	C3
Q1205	C2
Q1206	C2
Q1302	E3
Q1303	E2
Q1304	D6
Q1305	G3
Q1306	G3
Q1307	F3
Q1308	A6
Q1309	B6
Q1310	F3
Q1311	F6
Q1313	F4
Q1317	G6
Q1318	D5
Q1319	D5
Q1320	D5
Q1330	B6

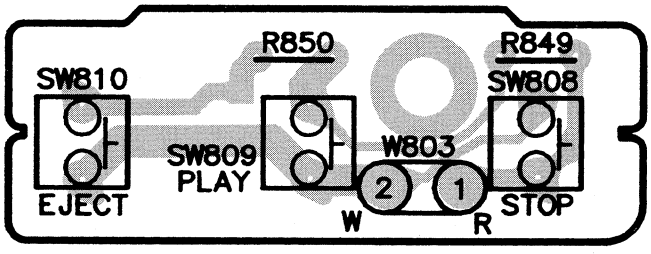
M CASSETTE P.C.B. (REP2767A)



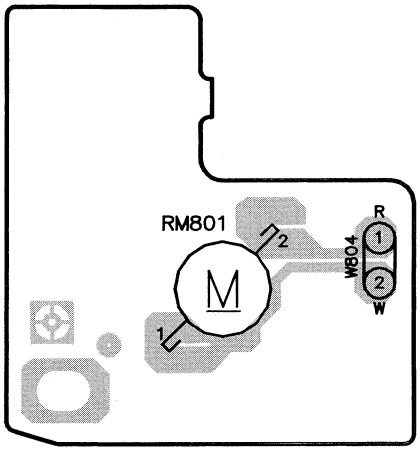
K TUNER BAND P.C.B. (REP2767A)



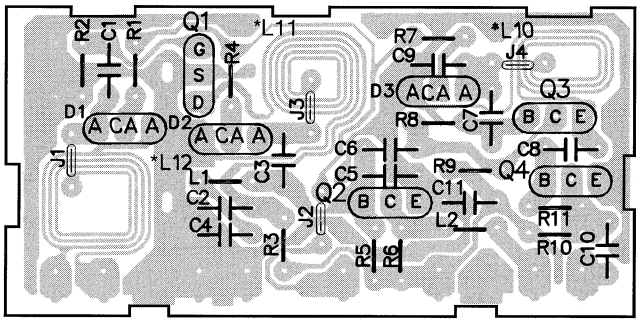
L CASSETTE EJECT P.C.B. (REP2767A)



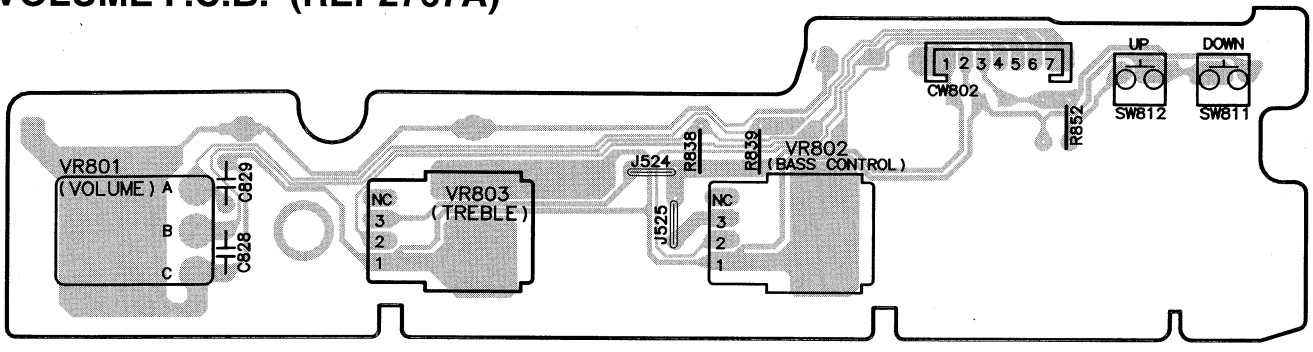
E MOTOR P.C.B. (REP2767A)



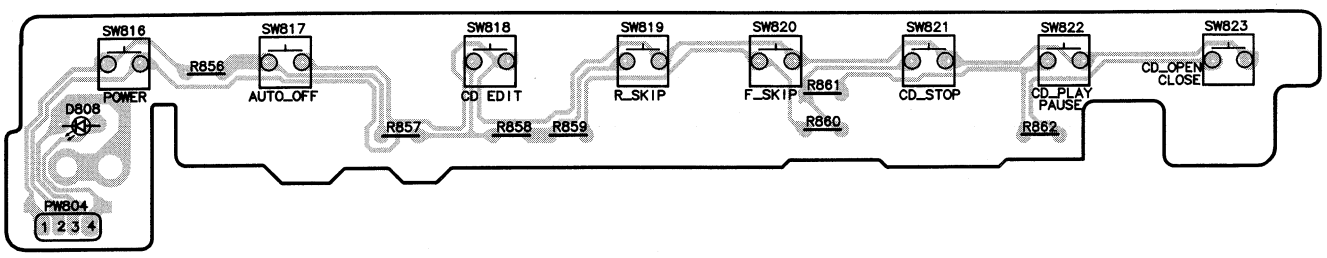
F TUNER PACK P.C.B. (REP1999B)



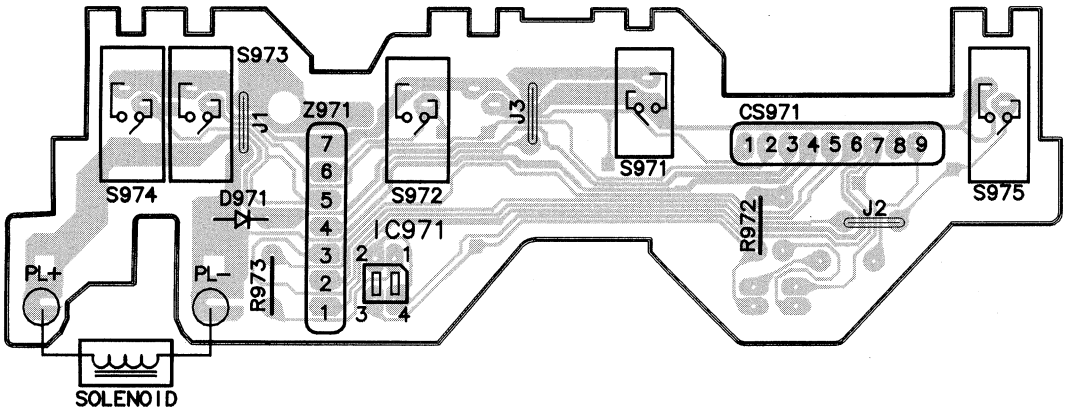
J VOLUME P.C.B. (REP2767A)



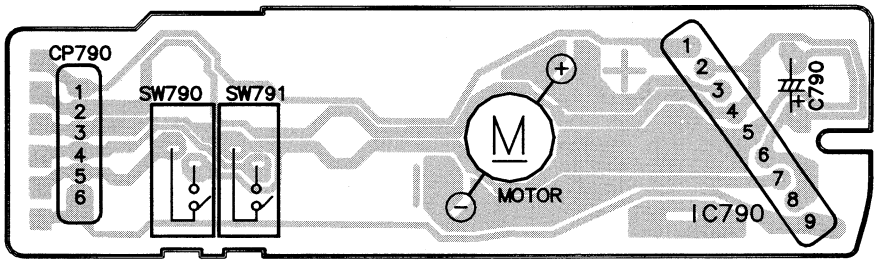
I CD OPERATION P.C.B. (REP2766A ... E/EB) (REP2766B ... EB)



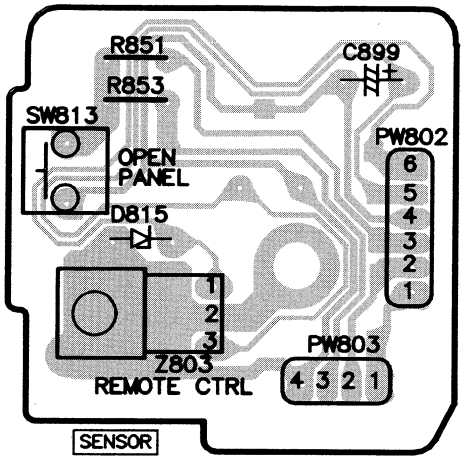
C MECHANISM P.C.B. (REPX0108)



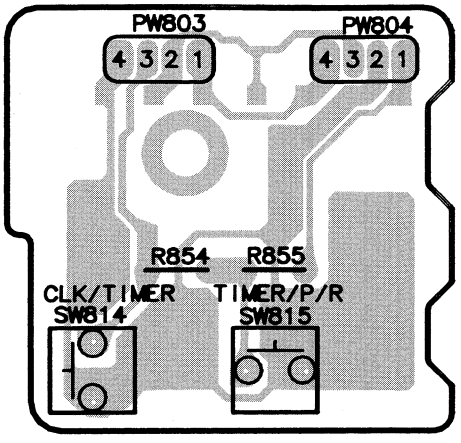
N LOADING MOTOR P.C.B. (REP1960A)



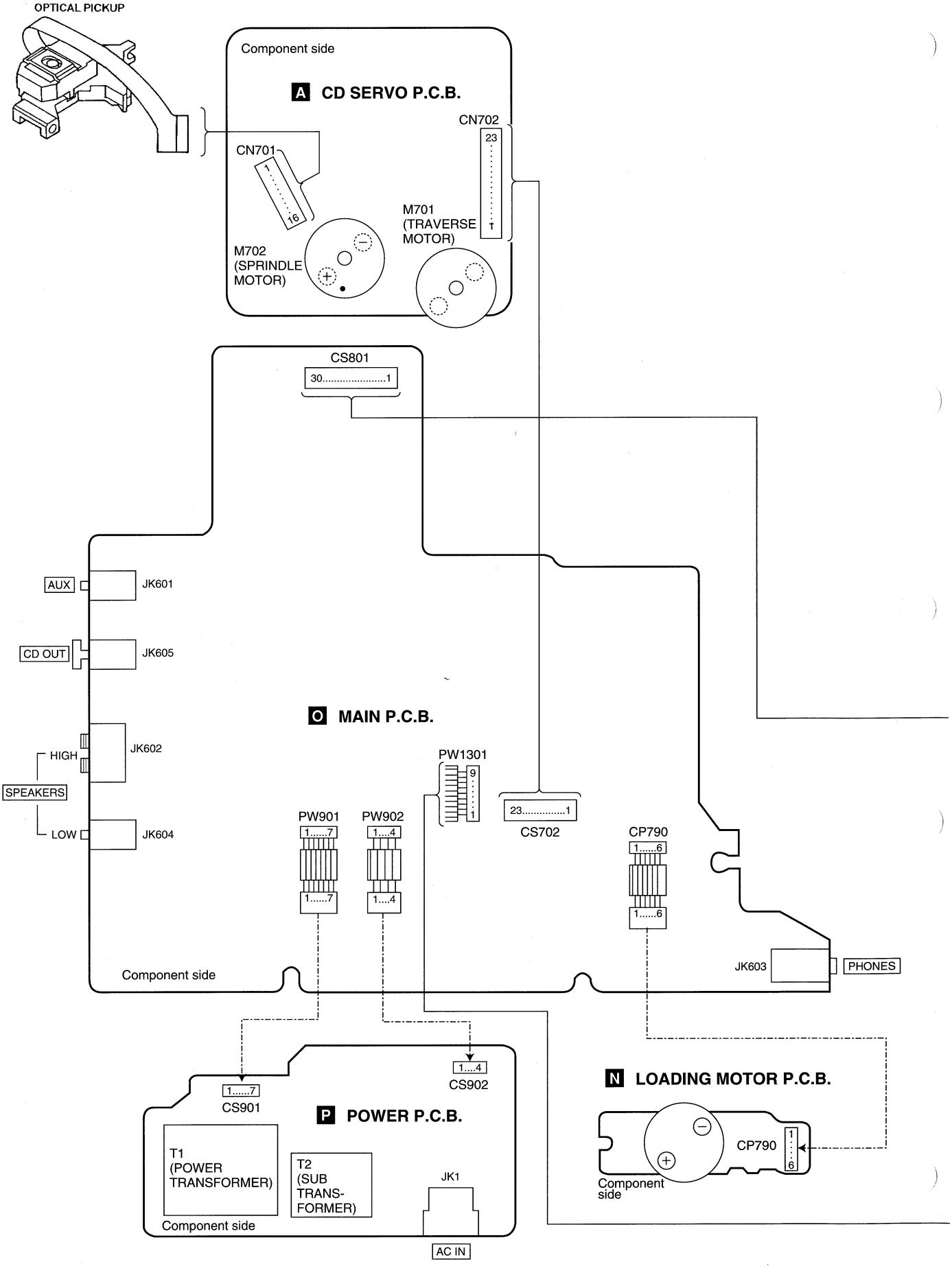
G SENSOR P.C.B. (REP2766A ... E/EG) (REP2766B ... EB)

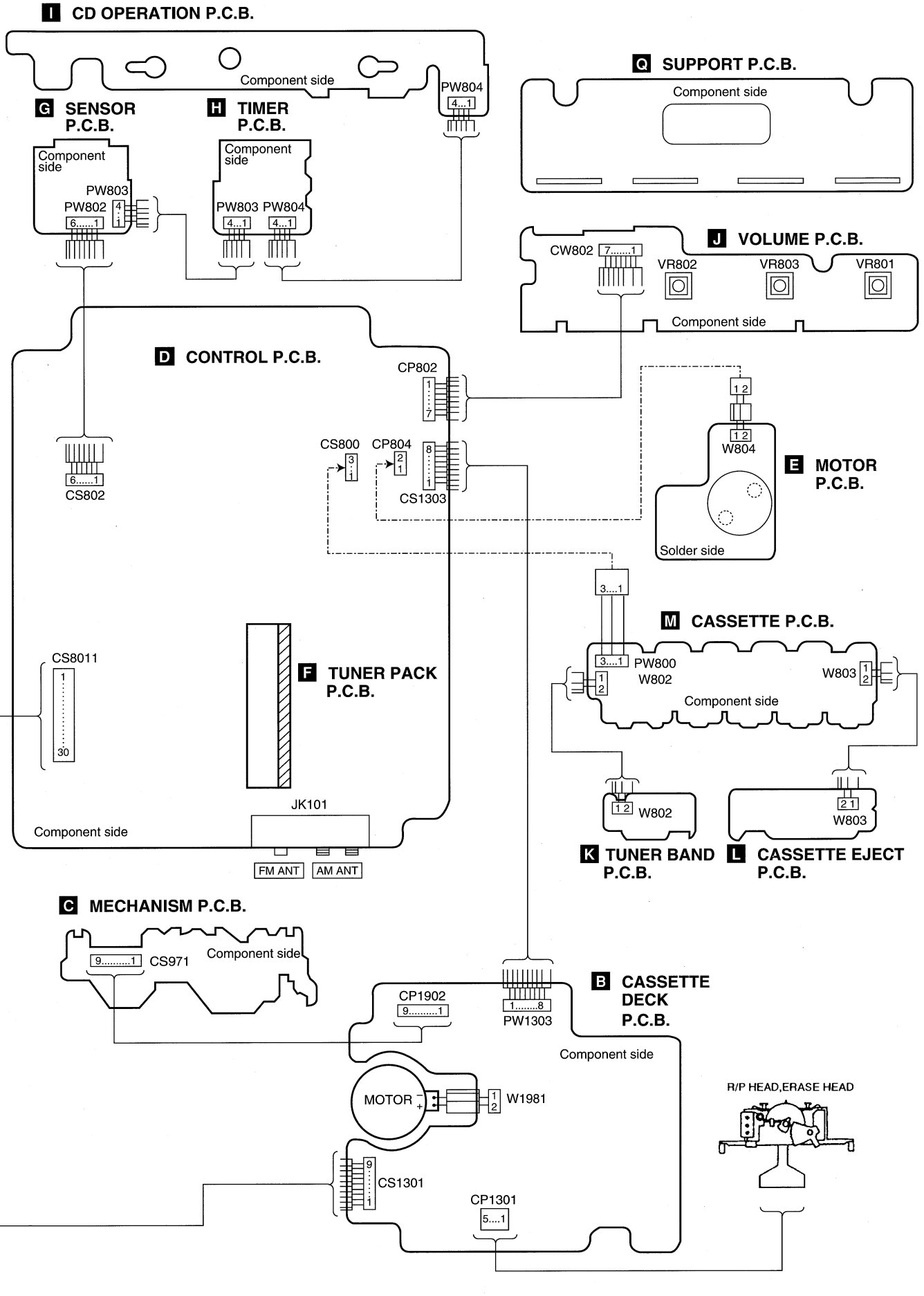


H TIMER P.C.B. (REP2766A ... E/EG) (REP2766B ... EB)

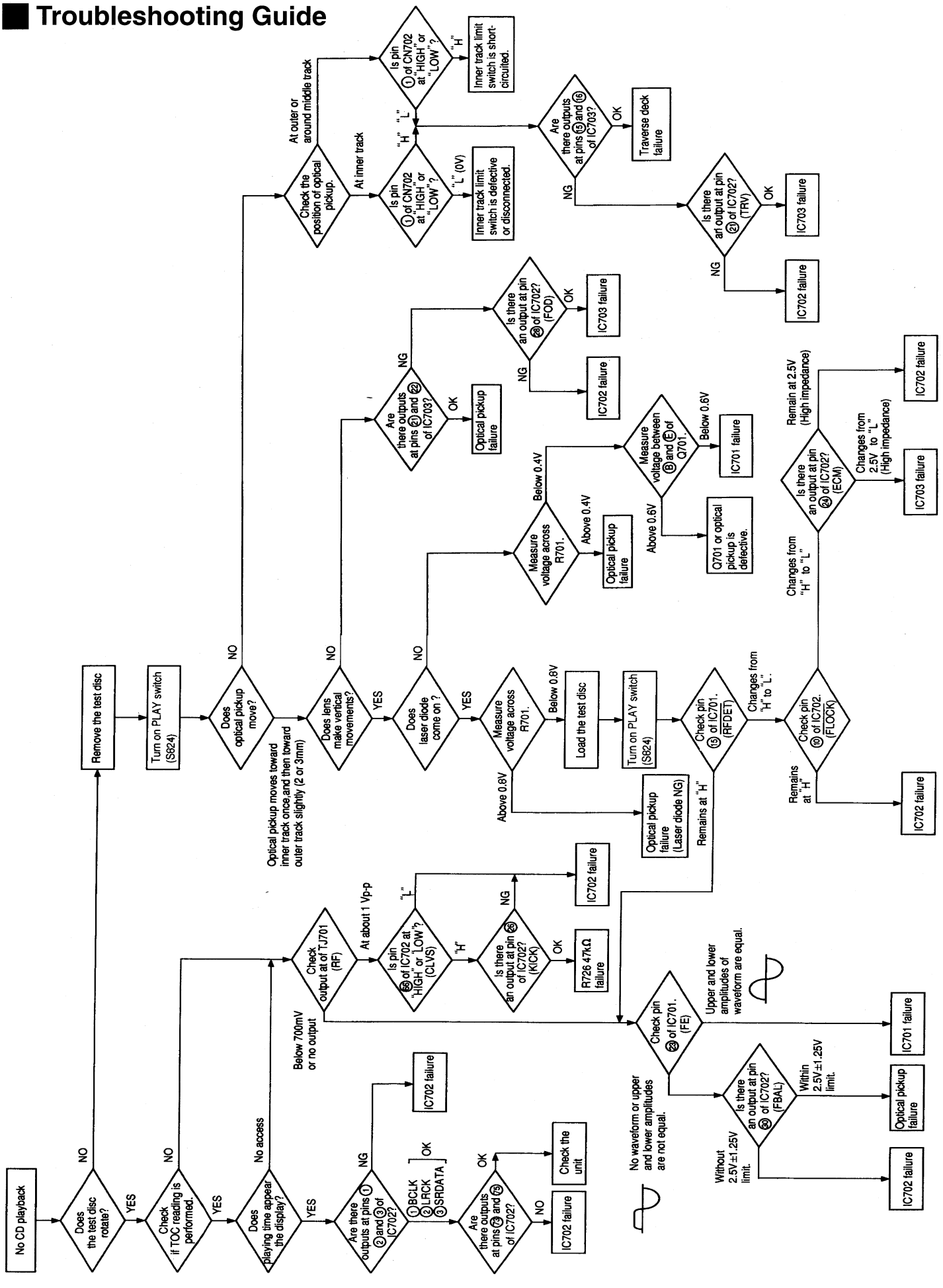


Wiring Connection Diagram

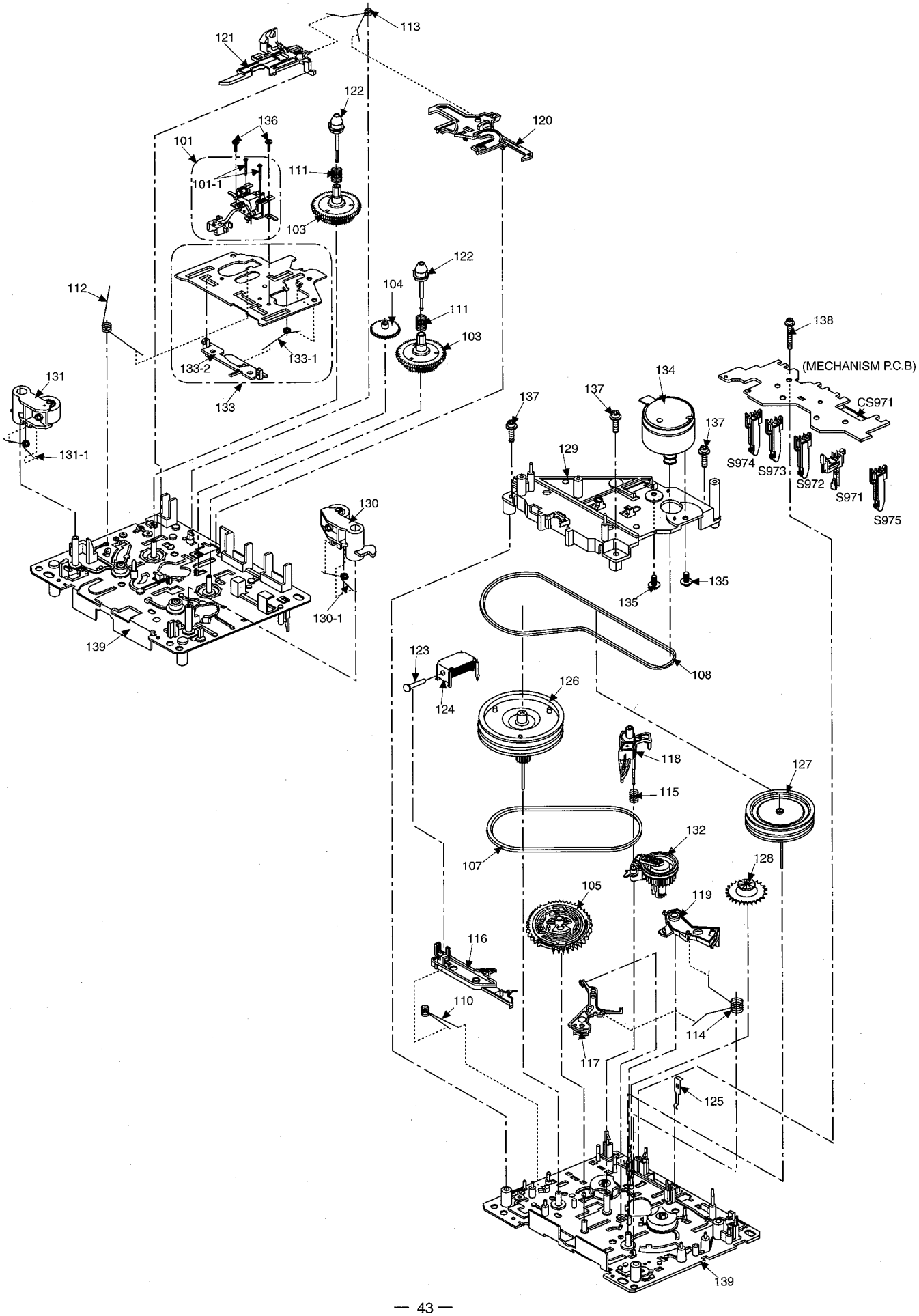



I CD OPERATION P.C.B.
Component side
PW804
4...1
G SENSOR P.C.B.
Component side
PW803
PW802
4
6.....1
H TIMER P.C.B.
Component side
PW803
PW804
4...1
4...1
Q SUPPORT P.C.B.
Component side
J VOLUME P.C.B.
CW802
7.....1
VR802
VR803
VR801
Component side
D CONTROL P.C.B.
CP802
1
7
CS800
3
1
CP804
2
1
8
1
CS1303
6.....1
CS802
1 2
1 2
W804
E MOTOR P.C.B.
Solder side
3....1
M CASSETTE P.C.B.
3....1
PW800
W802
1
2
W803
1
2
Component side
CS8011
1
30
F TUNER PACK P.C.B.
JK101
Component side
FM ANT
AM ANT
1 2
W802
2 1
W803
K TUNER BAND P.C.B.
L CASSETTE EJECT P.C.B.
C MECHANISM P.C.B.
9.....1
CS971
Component side
CP1902
9.....1
1.....8
PW1303
B CASSETTE DECK P.C.B.
Component side
MOTOR
W1981
1
2
R/P HEAD,ERASE HEAD
9
1
CS1301
CP1301
5....1

Troubleshooting Guide


No CD playback
Does the test disc rotate?
NO
YES
Remove the test disc
Turn on PLAY switch (S824)
Does optical pickup move?
NO
Optical pickup moves toward inner track once,and then toward outer track slightly (2 or 3mm)
Does lens make vertical movements?
NO
YES
Does laser diode come on ?
NO
YES
Measure voltage across R701.
Below 0.4V
Above 0.4V
Optical pickup failure
Measure voltage between ⑧ and Ⓔ of Q701.
Below 0.6V
IC701 failure
Above 0.6V
Q701 or optical pickup is defective.
Are there outputs at pins ② and ㉒ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ㉙ of IC702? (FOD)
OK
IC703 failure
NG
IC702 failure
Check the position of optical pickup.
At outer or around middle track
At inner track
Is pin ① of CN702 at "HIGH" or "LOW"?
"H"
Inner track limit switch is short-circuited.
"L" (0V)
Inner track limit switch is defective or disconnected.
"H" "L"
Are there outputs at pins ⑤ and ⑥ of IC703?
OK
Traverse deck failure
NG
Is there an output at pin ㉑ of IC702? (TRV)
OK
IC703 failure
NG
IC702 failure
Load the test disc
Turn on PLAY switch (S824)
Below 0.6V
Above 0.6V
Optical pickup failure (Laser diode NG)
Check pin ⑮ of IC701. (RFDET)
Changes from "H" to "L".
Remains at "H"
Check pin ⑯ of IC702. (FLOCK)
Changes from "H" to "L"
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
IC702 failure
Changes from 2.5V to "L" (High impedance)
IC703 failure
Remains at "H"
IC702 failure
No access
Does playing time appear the display?
YES
Are there outputs at pins ① ② and ③ of IC702?
NG
① BCLK ② LRCK ③ SRDATA
OK
IC702 failure
Are there outputs at pins ㉜ and ㉝ of IC702?
OK
NO
Check the unit
IC702 failure
Check if TOC reading is performed.
NO
YES
Check output at of TJ701 (RF)
At about 1 Vp-p
Below 700mV or no output
Is pin ㉘ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
IC702 failure
"H"
Is there an output at pin ㉖ of IC702? (KICK)
NG
OK
R726 47kΩ failure
Check pin ㉒ of IC701. (FE)
Upper and lower amplitudes of waveform are equal.
No waveform or upper and lower amplitudes are not equal.
Is there an output at pin ㉚ of IC702? (FBAL)
Within 2.5V ±1.25V limit.
Optical pickup failure
Without 2.5V ±1.25V limit.
IC702 failure
IC701 failure

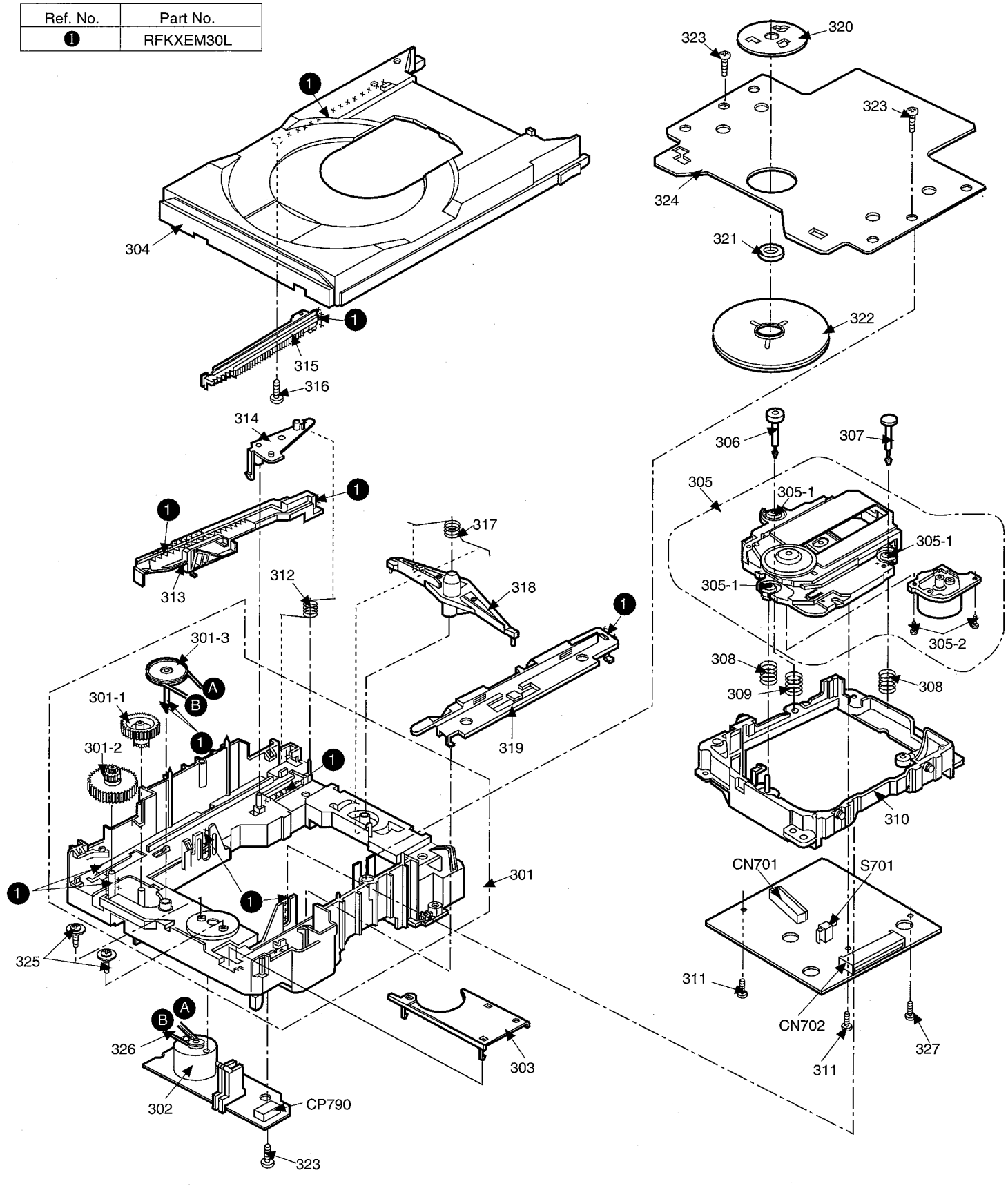
Mechanism Parts Location (RAA4106)



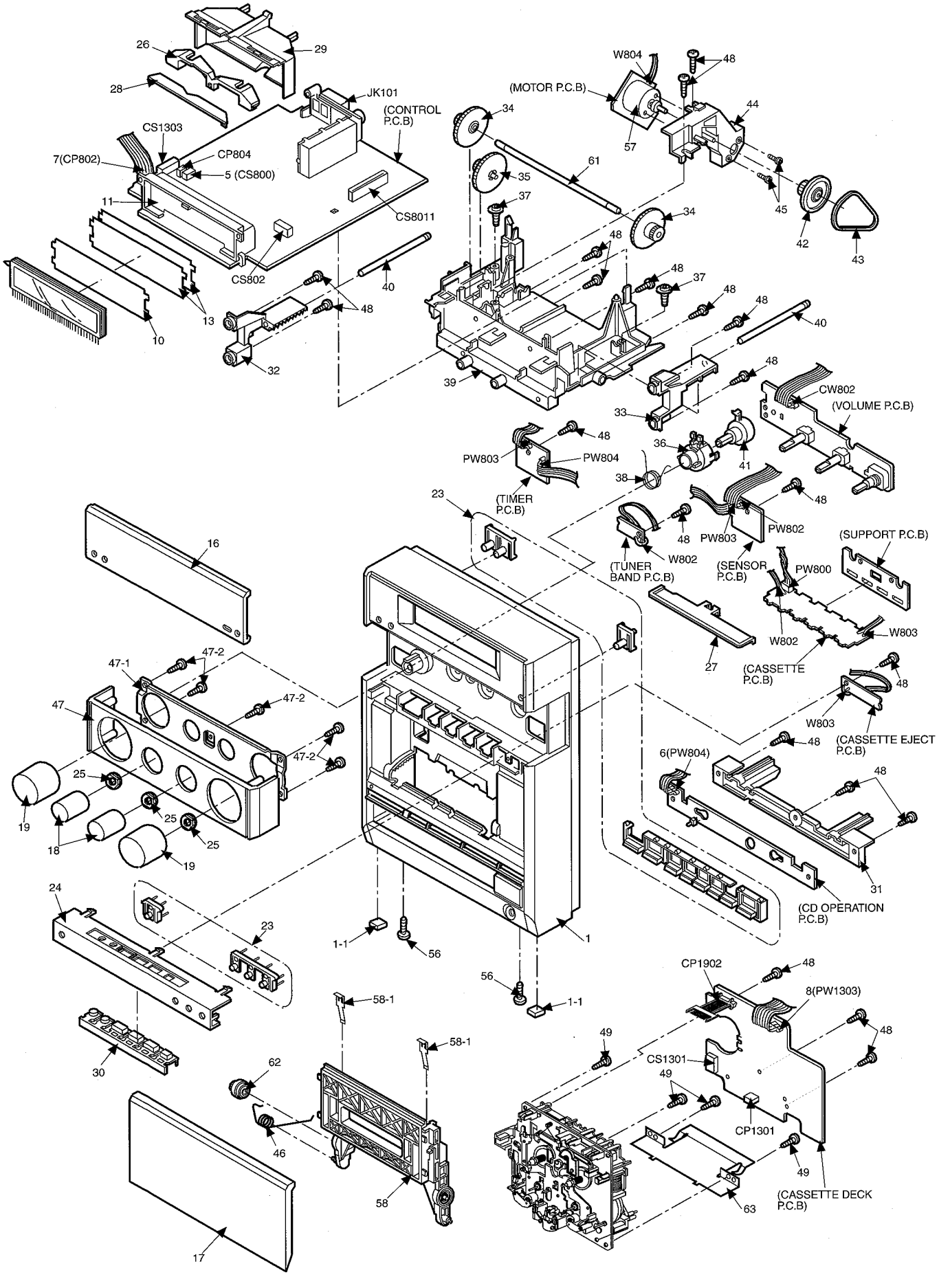
Loading Unit Parts Location

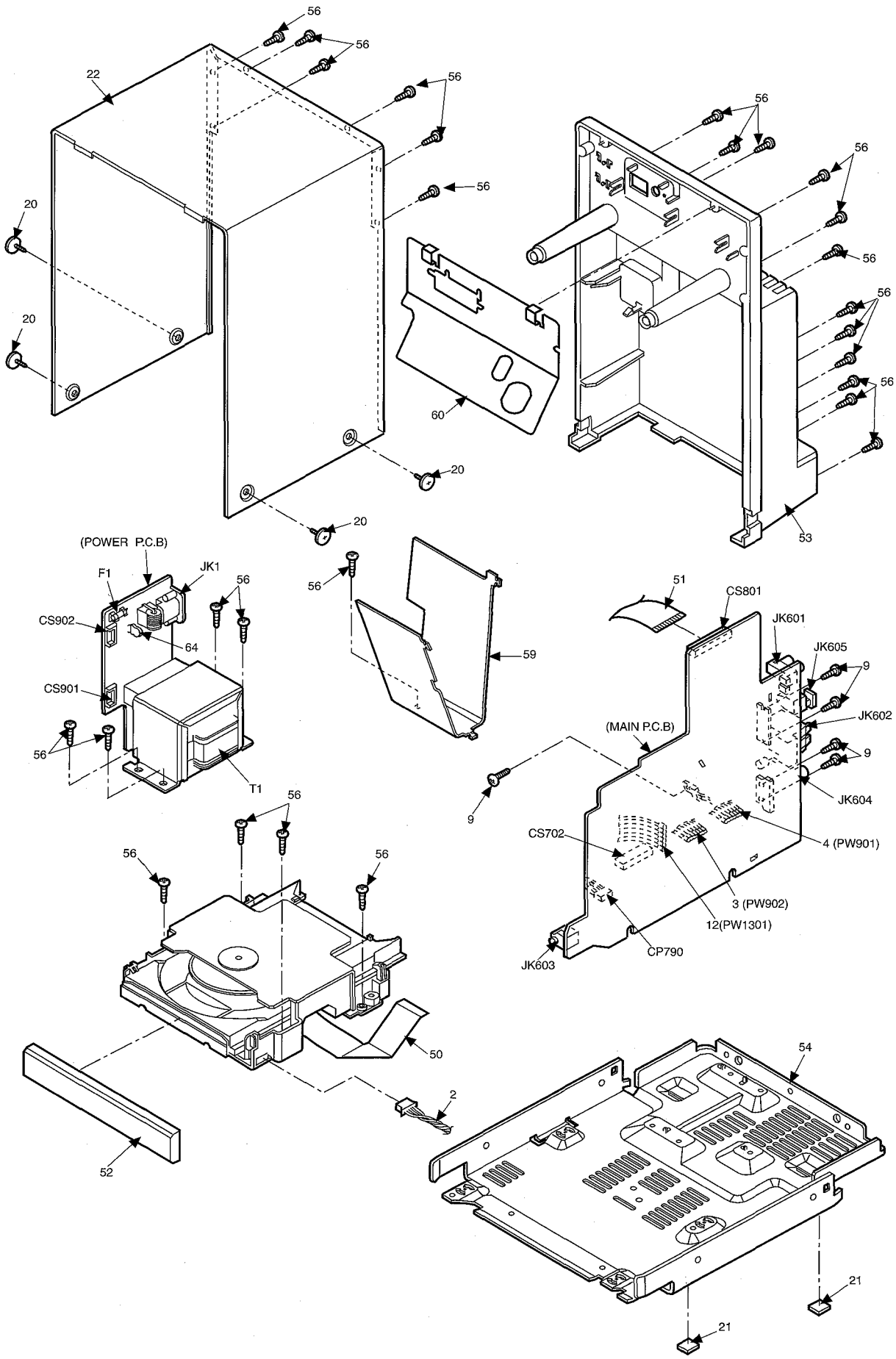
Note :
When changing mechanism parts, apply the specified grease to areas marked "xx" as shown in the drawing.

Ref. No.	Part No.
❶	RFKXEM30L



Cabinet Parts Location




56
22
20
60
53
(POWER P.C.B)
F1
JK1
CS902
64
CS901
T1
59
51
CS801
JK601
JK605
JK602
JK604
(MAIN P.C.B)
CS702
4 (PW901)
3 (PW902)
12(PW1301)
CP790
JK603
50
52
2
54
21

■ Replacement Parts List

Notes: * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indication can be used for all areas.
* [M] in Remarks column indicates parts that are supplied by **MESA**.
* **Warning** : This product uses a laser diode. Refer to caution statement.
ACHTUNG : • Die Lasereinheit nicht zerlegen.
• Die Lasereinheit darf nur gegen eine vom Hertsteller spezifizierte Einheit ausgetauscht werden.

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKGAPM20EBS	FRONT PANEL ASS'Y	[M]
1-1	RKA0095-K	LEG FELT	[M]
2	REX0963Y	6P (CD UNIT-MAIN)	[M]
3	RJS1A5504	CABLE HOLDER	[M]
4	RJS1A5507	WIRE W101 HOLDER	[M]
5	RJS2A1303	3P CABLE HOLDER	[M]
6	RJS2A1304	CONNECTOR	[M]
7	RJS2A1306	CABLE HOLDER	[M]
8	RJS2A1308	8P WIRE HOLDER	[M]
9	XTV3+10F	SCREW (HEAT SINK)	[M]
10	RGP0620-W	LCD SPACER SHEET	[M]
11	RMN0530	LCD HOLDER	[M]
12	RJS2A1309	9P WIRE HOLDER	[M]
13	RMR1094-W	DISORDER SHEET	[M]
16	RGP0721-Q	LCD PANEL	[M]
17	RGP0724-S	CASS. LID	[M]
18	RGW0267-S	BASS TREBLE KNOB	[M]
19	RGW0268-S	VOLUME KNOB	[M]
20	RHD30007-S	SCREW	[M]
21	RKA0095-K	LEG CUSHION	[M]
22	RKM0355Z-S	TOP CABINET	[M]
23	RGU1760-S	FAMILY BUTTON	[M]
24	RGP0723-S	BUTTON PANEL	[M]
25	RHN90001	M9 NUT	[M]
26	RGP0727-Q	LIGHTING PANEL	[M]
27	RGP0728-Q	DISORDER PANEL	[M]
28	RMQ0871	LAMP PLATE	[M]
29	RMR1220-W	LAMP COVER	[M]
30	RGU1571-S	CONTROL BUTTON	[M]
31	RMK0419	BUTTON CHASSIS	[M]
32	RDG0402	RACK L	[M]
33	RDG0403	RACK R	[M]
34	RDG0404	GEAR	[M]
35	RDG0405	TRANSFER GEAR	[M]
36	RDK0032	KNOB CAM	[M]
37	RHD26016	SCREW	[M]
38	RMB0533	KNOB SPRING	[M]
39	RMK0368	SLIDE PANEL CHASSIS	[M]
40	RMS0596	GUIDE SHAFT	[M]
41	RMS0598	KNOB SHAFT	[M]
42	RDP0056	BELT PULLEY	[M]
43	RMG0158	BELT	[M]
44	RMR1095-WJ	GEAR FIXTURE	[M]
45	XQN2+C3	SCREW	[M]
46	RMB0477	CASS OPEN SPRING	[M]
47	RYP0906-S	SLIDE PANEL UNIT	[M]
47-1	RMA1089	SLIDE MECHA ANGLE	[M]
47-2	XTV26+6G	SCREW	[M]
48	XTBS26+10J	SCREW	[M]
49	XTV3+10G	SCREW	[M]
50	REE0899	CD FFC	[M]
51	REE0800	33P FFC	[M]
52	RGK1144-S	CD LID	[M]
53	RFKHAPM20EBS	REAR CABINET ASS'Y	[M]EB
53	RFKHAPM20E-S	REAR CABINET ASS'Y	[M]E
53	RKS0270C-K	REAR CABINET	[M]EG
54	RMK0370	BOTTOM CHASSIS	[M]
56	XTB3+10JFZ	SCREW	[M]
57	RFKPAPM15EGS	MOTOR ASS'Y	[M]
58	RFKLAPM15EGS	CASS HOLDER ASS'Y	[M]
58-1	RUS757ZAA	CASS HALF SPRING	[M]
59	RMY0210	HEAT SINK	[M]
60	RSC0491	TUNER SHIELD	[M]
61	RMS0597	MAIN SHAFT	[M]
62	RDG0357	DUMPER GEAR	[M]
63	RSC0492	HEAD SHIELD	[M]
64	RMZ0339	ZNR COVER	[M]
		CASSETTE DECK	
101	RED0043	R/P HEAD BLOCK UNIT	[M]
101-1	RHD17015	SCREW	[M]
103	RDG0300	REEL BASE GEAR	[M]
104	RDG0301	WINDING RELAY GEAR	[M]
105	RDK0026	MAIN GEAR	[M]
107	RDV0033-1	WINDING BELT	[M]
108	RDV0034-1	CAPSTAN BELT 'A'	[M]
110	RMB0399	METAL EARTH SPRING	[M]
111	RMB0400	REEL SPRING	[M]
112	RMB0403	HEAD PANEL SPRING	[M]
113	RMB0404	BRAKE ROD SPRING	[M]
114	RMB0406	FR LEVER SP	[M]
115	RMB0408	THRUST SPRING	[M]
116	RML0370	TRIGGER LEVER	[M]
117	RML0371	FR LEVER	[M]
118	RML0372	WINDING LEVER	[M]
119	RML0374	EJECT LEVER	[M]
120	RMM0131	BRAKE ROD	[M]
121	RMM0133-1	EJECT ROD	[M]
122	RMQ0519	REEL HUB	[M]
123	RMS0398-1	MOVING CORE	[M]
124	RSJ0003	PLUNGER	[M]
125	RMC0061	PACK SPRING	[M]
126	RXF0049	FLYWHEEL 'F' ASS'Y	[M]
127	RXF0050	FLYWHEEL 'R' ASS'Y	[M]
128	RXG0040	FF RELAY GEAR ASS'Y	[M]
129	RMK0283A-J	SUB CHASSIS	[M]
130	RXL0124	PINCH ARM 'F' ASS'Y	[M]
130-1	RMB0401	PINCH ARM SPRING 'F'	[M]
131	RXL0125	PINCH ARM 'R' ASS'Y	[M]
131-1	RMB0402	PINCH ARM SPRING 'R'	[M]
132	RXL0126	WINDING ARM ASS'Y	[M]
133	RXQ0412	HEAD PANEL ASS'Y	[M]
133-1	RMB0405	FR ROD SPRING	[M]
133-2	RMM0132	FR ROD	[M]
134	RFKPXES50GCK	CAP MOTOR ASS'Y	[M]
135	RHD26022	MOTOR SCREW	[M]
136	XTW2+5L	HEAD BLOCK UNIT SCRE	[M]
137	XTW26+10S	SUB-CHASSIS SCREW	[M]
138	XYC2+JF17	PCB EARTH SCREW	[M]
139	RFKJSTR280PP	CHASSIS ASS'Y	[M]
		TRAVERSE DECK	
301	RFKJXDT07-K	TRV CHASSIS ASS'Y	[M]

Ref No.	Part No.	Part Name & Description	Remarks
301-1	RDG0142	INTERMEDIATE GEAR	[M]
301-2	RDG0193	DRIVE GEAR (1)	[M]
301-3	RDP0065	INTERMEDIATE PULLEY	[M]
302	REM0019	LOADING MOTOR ASS'Y	[M]
303	RMK0255	BELT COVER	[M]
304	RGQ0144-K	DISC TRAY	[M]
305	RAE0152Z-M	TRAVERSE UNIT	[M]
305-1	SHGD113-1	FLOATING RUBBER (A)	[M]
305-2	SNSD38	SCREW	[M]
306	RMS0350	FIXED PIN B	[M]
307	RMS0123-1	FIXED PIN A	[M]
308	RME0109	FLOATING SPRING A	[M]
309	RME0142	FLOATING SPRING B	[M]
310	RMR0698-K	TRAVERSE CHASSIS	[M]
311	XTV2+6G	SCREW	[M]
312	RME0063	LOCK LEVER SPRING	[M]
313	RMM0079-1	SLIDE PLATE (1)	[M]
314	RML0178-1	LOCK LEVER	[M]
315	RFKNLPG440-K	DRIVE GEAR (2) ASS'Y	[M]
316	RHD20009-1	SCREW	[M]
317	RME0087	ASSISTANCE SPRING	[M]
318	RML0349	CONVERSION LEVER	[M]
319	RMM0059-1	SLIDE PLATE (2)	[M]
320	RMR0334	FIXED PLATE	[M]
321	RHM245ZA	MAGNET	[M]
322	RXQ0380	MAGNET HOLDER ASS'Y	[M]
323	XTN26+6G	SCREW	[M]
324	RMA0793	CLAMP PLATE	[M]
325	XYN2+F6FZ	SCREW (MOTOR)	[M]
326	RMG0158	BELT	[M]
327	XTN26+6G	SCREW	[M]
		INTEGRATED CIRCUITS	
IC101	LA1833MN-TLM	IC, IF & MPX	[M]
IC102	LC72131MDTRM	IC, PLL	[M]
IC601	BH3857AFV-E2	IC, SOUND PROCESSOR	[M]
IC602	AN7135	IC, POWER AMP ⚠	[M]
IC603	LA4705NA	IC, POWER ⚠	[M]
IC701	AN8837SBE1	IC, HEAD AMP	[M]
IC702	MN662746RPK1	IC, LSI	[M]
IC703	AN8780NSBE2	IC	[M]
IC790	TA7291S	IC, LOADING MOTOR CD	[M]
IC801	M38258M054FP	IC, MICRO PROCESSOR	[M]
IC802	BA6283N	IC, MOTOR DRIVER	[M]
IC971	0N2180RLC	IC, PHOTO INTERUPTOR	[M]
IC1301	BA7755A	IC, ANALOG SW	[M]
IC1302	TA8142AP	IC, PB/REC PRE-AMP	[M]

Ref No.	Part No.	Part Name & Description	Remarks
IC1303	BA4558FE2	IC, OP AMP	[M]
		TRANSISTORS	
Q1	2SC1740SRTA	TRANSISTOR	[M]
Q101	2SC2787LTA	TRANSISTOR	[M]
Q102	2SC2787LTA	TRANSISTOR	[M]
Q106	RVTDTA114EST	TRANSISTOR	[M]
Q401	2SC1740SRTA	TRANSISTOR	[M]
Q402	2SC1740SRTA	TRANSISTOR	[M]
Q404	2SC1740SLNST	TRANSISTOR	[M]
Q406	2SC1740SRTA	TRANSISTOR	[M]
Q501	2SC1740SRTA	TRANSISTOR	[M]
Q502	2SC1740SRTA	TRANSISTOR	[M]
Q504	2SC1740SLNST	TRANSISTOR	[M]
Q505	2SC1740SLNST	TRANSISTOR	[M]
Q506	2SC1740SRTA	TRANSISTOR	[M]
Q507	2SC2001LTA	TRANSISTOR	[M]
Q603	RVTDTA114YST	TRANSISTOR	[M]
Q606	RVTDTA114EST	TRANSISTOR	[M]
Q607	RVTDTA143XST	TRANSISTOR	[M]
Q608	2SC1740SRTA	TRANSISTOR ⚠	[M]
Q609	2SA952LTA	TRANSISTOR ⚠	[M]
Q610	2SB1566E	TRANSISTOR ⚠	[M]
Q611	2SC1740SRTA	TRANSISTOR ⚠	[M]
Q612	RVTDTA143TST	TRANSISTOR	[M]
Q613	RVTDTA114YST	TRANSISTOR	[M]
Q614	RVTDTC114EST	TRANSISTOR	[M]
Q615	2SD2037ETA	TRANSISTOR	[M]
Q616	2SD592ARTA	TRANSISTOR	[M]
Q617	RVTDTA114EST	TRANSISTOR ⚠	[M]
Q618	RVTDTC114EST	TRANSISTOR ⚠	[M]
Q620	2SC1740SRTA	TRANSISTOR	[M]
Q621	RVTDTA114EST	TRANSISTOR	[M]
Q692	2SD592ARTA	TRANSISTOR	[M]
Q693	2SD592ARTA	TRANSISTOR ⚠	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]
Q702	DTC114YKA146	TRANSISTOR	[M]
Q801	2SC2001KTA	TRANSISTOR ⚠	[M]
Q802	2SC2001KTA	TRANSISTOR ⚠	[M]
Q803	2SC1740SRTA	TRANSISTOR	[M]
Q804	RVTDTC144EST	TRANSISTOR	[M]
Q806	RVTDTC144EST	TRANSISTOR	[M]
Q807	2SC1740SRTA	TRANSISTOR	[M]
Q808	2SC1740SRTA	TRANSISTOR	[M]
Q811	RVTDTC144EST	TRANSISTOR	[M]
Q812	2SA1309AQSTA	TRANSISTOR	[M] ⚠
Q813	2SA1309AQSTA	TRANSISTOR	[M] ⚠

Ref No.	Part No.	Part Name & Description	Remarks
Q814	2SD592ARTA	TRANSISTOR	[M] ⚠
Q815	2SC1740SRTA	TRANSISTOR	[M]
Q816	2SC1740SRTA	TRANSISTOR	[M]
Q819	2SA1309AQSTA	TRANSISTOR	[M]
Q820	RVTDTC144EST	TRANSISTOR	[M]
Q1101	2SJ498CTA	TRANSISTOR	[M]
Q1102	2SJ498CTA	TRANSISTOR	[M]
Q1103	2SC1740SRTA	TRANSISTOR	[M]
Q1104	2SC1740SRTA	TRANSISTOR	[M]
Q1105	2SJ498CTA	TRANSISTOR	[M]
Q1106	RVTDTC124TST	TRANSISTOR	[M]
Q1201	2SJ498CTA	TRANSISTOR	[M]
Q1202	2SJ498CTA	TRANSISTOR	[M]
Q1203	2SC1740SRTA	TRANSISTOR	[M]
Q1204	2SC1740SRTA	TRANSISTOR	[M]
Q1205	2SJ498CTA	TRANSISTOR	[M]
Q1206	RVTDTC124TST	TRANSISTOR	[M]
Q1302	2SC1845FTA	TRANSISTOR	[M]
Q1303	2SC2001LTA	TRANSISTOR	[M]
Q1304	RVTDTC114TST	TRANSISTOR	[M]
Q1305	2SC1740SRTA	TRANSISTOR	[M]
Q1306	2SC1740SRTA	TRANSISTOR	[M]
Q1307	2SC1740SRTA	TRANSISTOR	[M]
Q1308	2SC1740SRTA	TRANSISTOR	[M]
Q1309	2SC1740SRTA	TRANSISTOR	[M]
Q1310	RVTDTC114EST	TRANSISTOR	[M]
Q1311	RVTDTC143XST	TRANSISTOR	[M]
Q1313	2SC1740SRTA	TRANSISTOR	[M]
Q1317	RVTDTA143XST	TRANSISTOR	[M]
Q1318	RVTDTA143XST	TRANSISTOR	[M]
Q1319	2SD965RTA	TRANSISTOR	[M]
Q1320	2SB1030RTA	TRANSISTOR	[M]
Q1330	2SC1740SRTA	TRANSISTOR	[M]
		DIODES	
D1	RL1N4003N02	DIODE ⚠	[M]
D2	RL1N4003N02	DIODE ⚠	[M]
D3	RL1N4003N02	DIODE ⚠	[M]
D4	RL1N4003N02	DIODE ⚠	[M]
D5	RVD1SS133TA	DIODE	[M]
D101	MTZJ5R1BTA	DIODE	[M]
D602	RL1N4003N02	DIODE	[M]
D603	RL1N4003N02	DIODE	[M]
D605	RVD1SS133TA	DIODE	[M]
D606	RVD1SS133TA	DIODE	[M]
D607	MTZJ9R1ATA	DIODE ⚠	[M]
D609	1SS291TA	DIODE	[M]

Ref No.	Part No.	Part Name & Description	Remarks
D610	MTZJ24DTA	DIODE ⚠	[M]
D611	RL1N4003N02	DIODE	[M]
D612	MTZJ5R6CTA	DIODE ⚠	[M]
D616	RL1N4003N02	DIODE	[M]
D625	RVD1SS133TA	DIODE	[M]
D626	RVD1SS133TA	DIODE	[M]
D627	RB441Q40T77	DIODE	[M]
D646	MTZJ5R1BTA	DIODE	[M]
D693	RVD1SS133TA	DIODE	[M]
D694	MTZJ5R1BTA	DIODE	[M]
D696	MTZJ7R5BTA	DIODE ⚠	[M]
D697	RVD1SS133TA	DIODE	[M]
D698	1D3E	DIODE	[M]
D699	1SS291TA	DIODE	[M]
D808	LN282RPXTA	DIODE	[M]
D809	RVD1SS133TA	DIODE	[M]
D810	1SS291TA	DIODE	[M]
D811	RVD1SS133TA	DIODE	[M]
D812	MTZJ5R6ATA	DIODE ⚠	[M]
D813	1SS291TA	DIODE	[M]
D814	MTZJ15CTA	DIODE	[M]
D815	MTZJ8R2BTA	DIODE	[M]
D816	SLR325MCT31	DIODE	[M]
D820	RVD1SS133TA	DIODE	[M]
D901	1N5402BM21	DIODE ⚠	[M]
D902	1N5402BM21	DIODE ⚠	[M]
D903	1N5402BM21	DIODE ⚠	[M]
D904	1N5402BM21	DIODE ⚠	[M]
D971	MA165TA	DIODE	[M]
D1301	RVD1SS133TA	DIODE	[M]
D1303	RVD1SS133TA	DIODE	[M]
		VARIABLE RESISTORS	
VR801	RRV16B24104G	VR, ROTARY ENCORDER	[M]
VR802	RRV11A02B54A	VR, ENCORDED VOL	[M]
VR803	RRV11A02B54A	VR, ENCORDED VOL	[M]
		SWITCHES	
S701	RSH1A043-U	SW, REST	[M]
S971	RSH1A018-3U	MODE SWITCH	[M]
S972	RSH1A019-2U	SW, LEAF	[M]
S973	RH1A019-2U	SW, LEAF	[M]
S974	RSH1A019-2U	SW, LEAF	[M]
S975	RSH1A019-2U	SW, LEAF	[M]
SW790	RSH1A005	SW, OPEN	[M]
SW791	RSH1A005	SW, CLOSE	[M]

Ref No.	Part No.	Part Name & Description	Remarks
SW801	EVQ21405R	SW, TUNER BAND	[M]
SW802	EVQ21405R	SW, TUNER MODE	[M]
SW803	EVQ21405R	SW, MEMORY SET	[M]
SW804	EVQ21405R	SW, REC/REC PAUSE	[M]
SW805	EVQ21405R	SW, REW	[M]
SW806	EVQ21405R	SW, FF	[M]
SW807	EVQ21405R	SW, AUX	[M]
SW808	EVQ21405R	SW, TAPE STOP	[M]
SW809	EVQ21405R	SW, TAPE PLAY	[M]
SW810	EVQ21405R	SW, TAPE EJECT	[M]
SW811	EVQ21405R	SW, DOWN	[M]
SW812	EVQ21405R	SW, UP	[M]
SW813	EVQ21405R	SW, OPEN	[M]
SW814	EVQ21405R	SW, CLOCK/TIMER	[M]
SW815	EVQ21405R	SW, TIMER PLAY/REC	[M]
SW816	EVQ21405R	SW, POWER	[M]
SW817	EVQ21405R	SW, AUTO OFF	[M]
SW818	EVQ21405R	SW, CD EDIT	[M]
SW819	EVQ21405R	SW, REW/SKIP	[M]
SW820	EVQ21405R	SW, FF/SKIP	[M]
SW821	EVQ21405R	SW, CD STOP	[M]
SW822	EVQ21405R	SW, CD PLAY/PAUSE	[M]
SW823	EVQ21405R	SW, CD OPEN/CLOSE	[M]
		CONNECTORS	
CN701	RJS2A6016	16P FFC CONNECTOR	[M]
CN702	RJS1A6723-1Q	23P FFC CONNECTOR	[M]
CP790	RJP6G18ZA	6P CONNECTOR (MAIN)	[M]
CP790	RJP6G17ZA	6P CON. (LOADING MTR)	[M]
CP802	RJP7G18ZA	7P CONNECTOR	[M]
CP804	RJT029W02V-1	MOTOR CONNECTOR	[M]
CP1301	RJS1A6805-J	CONNECTOR	[M]
CP1902	RJT071K09A	CONNECTOR	[M]
CS702	RJS1A9423	FFC CONNECTOR	[M]
CS800	RJS1A5203	3P CONNECTOR	[M]
CS801	RJS1A9430	30P FFC CONNECTOR	[M]
CS802	RJS1A5206	TO TUNER PCB	[M]
CS901	RJT029W007-1	7P CONNECTOR	[M]
CS902	RJT029W004-1	4P CONNECTOR	[M]
CS971	RJU071H09M1	CONNECTOR	[M]
CS1301	RJS9T7ZA	9P CONNECTOR	[M]
CS1303	RJS1A5208	8P MOLEX	[M]
CS8011	RJS1A9430	30P FFC CONNECTOR	[M]
		COILS & TRANSFORMERS	
L1	RLQZ271M	AC LINE COIL ⚠	[M]

Ref No.	Part No.	Part Name & Description	Remarks
L101	ELESNR68MA	CHOKE COIL	[M]
L102	ELESNR68MA	CHOKE COIL	[M]
L103	ELEXTR47MA9	CHOKE COIL	[M]
L401	RLL500050T-Y	RF CHOKE COIL	[M]
L501	RLL500050T-Y	RF CHOKE COIL	[M]
L601	RLL500050T-Y	RF CHOKE COIL	[M]
L619	RLQZP2R2KT-Y	COIL	[M]
L620	RLQZP1R0KT-Y	AXIAL COIL	[M]
L804	RLQZB470KT-D	RF CHOKE	[M]
L1301	RL08B003-K	BIAS OSC COIL	[M]
L1303	RLQA470JT1-Y	COIL	[M]
T1	RTP1M3B014-X	POWER TRANSFORMER	[M] ⚠
T2	RTP1I3E001-V	BABY TRANSFORMER	[M] ⚠
		COMPONENT COMBINATION	
Z1	ERZV10V511CS	ZNR	[M]
Z101	RLA2Z006M-T	ANT COIL BLOCK	[M]
Z102	RLI2Z006M-T	AM IFT	[M]
Z120	ENV17290G1Y	FM TUNER PACK	[M]
Z801	XAMR141	LAMP	[M]
Z802	XAMR141	LAMP	[M]
Z803	RCDRPM6937H4	REMOTE SENSOR	[M]
Z971	EXBF7L355SYV	RADA RESISTOR	[M]
		CERAMIC FILTERS	
CF201	RLFFETNGD01L	CERAMIC CAPACITOR	[M]
CF202	RLFFETMGD01L	CERAMIC FILTER	[M]
		RELAY	
RL1	RSY0040M-0	RELAY ⚠	[M]
		OSCILLATORS	
X102	RLFDFT13DD	CERAMIC FILTER	[M]
X103	RSXD7M20C01	CRYSTAL 7.2 MHZ	[M]
X701	RSXZ16M9M01T	CERAMIC OSC	[M]
X801	RSXZ4M19D01T	CERAMIC OSC	[M]
X802	RSXD32K0C01	CRYSTAL	[M]
		FUSES	
F1	XBA2C06TB0	FUSE ⚠	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		FUSE HOLDER	
FH1	RJR0169T	FUSE HOLDER	[M]
FH2	RJR0169T	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP601	RSFMB20KT-L	PROTECTOR ⚠	[M]
		JACKS	
JK1	SJS9236-1	JK, AC INLET	[M] ⚠
JK101	RJH5210-1	JK, ANTENNA	[M]
JK601	RJH2206	JK, RCA PIN	[M]
JK602	RJH5410	JK, SPEAKER TERMINAL	[M]
JK603	RJJ39T01	JK, MIC JACK	[M]
JK604	RJH2208	JK, RCA	[M]
JK605	T0TX178	JK, CD OUT	[M]
		LCD	
LCD801	RSL5222-L	LCD	[M]
		WIRE	
W802	RWJ4202110KK	2P (LAMP OTHER)	[M]
W803	RWJ4202110KK	2P (LAMP OTHER)	[M]
W804	REX0875	2P (CONTR-MOTOR)	[M]
W1981	RWJ0102050KR	MAIN-MECHA MOTOR WIR	[M]
CW802	REX0886Y	7P (VOL-CONTR)	[M]
PW800	RWJ1103195CX	3P (CONT-OPR)	[M]
PW802	RWJ1106120CC	6P (CONTR-SENSOR)	[M]
PW803	RWJ1104260XX	WIRE	[M]
PW804	RWJ1104300CC	4P (CD OPER-TIMER)	[M]
PW901	REX0958	WIRE	[M]
PW902	REX0957	WIRE	[M]
PW1301	RWJ8209210QX	WIRE	[M]
PW1303	RWJ8208240CX	WIRE	[M]

■ Resistors & Capacitors

Notes : • Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors),etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
• The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indication can be used for all areas.
• [M] in Remarks column indicates parts that are supplied by **MESA**.
• Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
• Resistors values are in ohms, unless specified otherwise, 1k=1,000(OHM), 1M=1,000k(OHM)

Ref No.	Part No.	Values & Remarks
	RESISTORS	
R2	ERDS2TJ332T	3.3K 1/4W [M]
R3	ERDS2TJ103T	10K 1/4W [M]
R4	ERDS2TJ2R2T	2.2 1/4W [M]
R5	ERDS2TJ2R2T	2.2 1/4W [M]
R102	ERDS2TJ472T	4.7K 1/4W [M]
R103	ERDS2TJ101T	100 1/4W [M]
R104	ERDS2TJ103T	10K 1/4W [M]
R105	ERDS2TJ471T	470 1/4W [M]
R106	ERDS2TJ474T	470K 1/4W [M]
R107	ERDS2TJ331T	330 1/4W [M]
R108	ERDS2TJ474T	470K 1/4W [M]
R109	ERDS2TJ331T	330 1/4W [M]
R110	ERDS2TJ562T	5.6K 1/4W [M]
R111	ERDS2TJ391T	390 1/4W [M]
R112	ERDS2TJ104T	100K 1/4W [M]
R113	ERDS2TJ103T	10K 1/4W [M]
R114	ERDS2TJ562T	5.6K 1/4W [M]
R115	ERDS2TJ561T	560 1/4W [M]
R116	ERDS2TJ102T	1K 1/4W [M]
R117	ERDS2TJ683T	68K 1/4W [M]
R118	ERDS2TJ472T	4.7K 1/4W [M]
R119	ERDS2TJ333T	33K 1/4W [M]
R120	ERDS2TJ473T	47K 1/4W [M]
R121	ERDS2TJ223T	22K 1/4W [M]
R122	ERDS2TJ272T	2.7K 1/4W [M]
R123	ERDS2TJ683T	68K 1/4W [M]
R124	ERDS2TJ271T	270 1/4W [M]
R125	ERDS2TJ471T	470 1/4W [M]
R126	ERDS2TJ152T	1.5K 1/4W [M]
R127	ERDS2TJ471T	470 1/4W [M]
R128	ERDS2TJ820T	82 1/4W [M]
R129	ERDS2TJ273T	27K 1/4W [M]
R130	ERDS2TJ103T	10K 1/4W [M]
R131	ERDS2TJ680T	68 1/4W [M]
R132	ERDS2TJ103T	10K 1/4W [M]
R133	ERDS2TJ102T	1K 1/4W [M]
R134	ERDS2TJ471T	470 1/4W [M]
R135	ERDS2TJ102T	1K 1/4W [M]
R136	ERDS2TJ102T	1K 1/4W [M]
R137	ERDS2TJ102T	1K 1/4W [M]
R138	ERDS2TJ332T	3.3K 1/4W [M]
R141	ERDS2TJ102T	1K 1/4W [M]
R142	ERDS2TJ102T	1K 1/4W [M]
R143	ERDS2TJ223T	22K 1/4W [M]
R145	ERDS2TJ104T	100K 1/4W [M]
R146	ERDS2TJ104T	100K 1/4W [M]
R401	ERDS2TJ183T	18K 1/4W [M]
R404	ERDS2TJ562T	5.6K 1/4W [M]
R405	ERDS2TJ183T	18K 1/4W [M]
R408	ERDS2TJ333T	33K 1/4W [M]
R409	ERDS2TJ153T	15K 1/4W [M]
R410	ERDS2TJ273T	27K 1/4W [M]
R411	ERDS2TJ392T	3.9K 1/4W [M]
R414	ERDS2TJ472T	4.7K 1/4W [M]
R415	ERDS2TJ223T	22K 1/4W [M]
R416	ERDS2TJ104T	100K 1/4W [M]
R417	ERDS2TJ472T	4.7K 1/4W [M]
R418	ERDS2TJ473T	47K 1/4W [M]
R423	ERDS2TJ153T	15K 1/4W [M]
R425	ERDS2TJ562T	5.6K 1/4W [M]
R426	ERDS2TJ820T	82 1/4W [M]
R429	ERDS2TJ2R2T	2.2 1/4W [M]
R430	ERDS2TJ2R2T	2.2 1/4W [M]
R433	ERDS2TJ100T	10 1/4W [M]
R434	ERDS2TJ1R2T	1.2 1/4W [M]
R435	ERDS2TJ1R0T	1 1/4W [M]
R438	ERDS2TJ103T	10K 1/4W [M]
R439	ERDS2TJ272T	2.7K 1/4W [M]
R444	ERDS2TJ822T	8.2K 1/4W [M]
R501	ERDS2TJ183T	18K 1/4W [M]
R504	ERDS2TJ562T	5.6K 1/4W [M]
R505	ERDS2TJ183T	18K 1/4W [M]
R508	ERDS2TJ333T	33K 1/4W [M]
R509	ERDS2TJ153T	15K 1/4W [M]
R510	ERDS2TJ273T	27K 1/4W [M]
R511	ERDS2TJ392T	3.9K 1/4W [M]
R514	ERDS2TJ472T	4.7K 1/4W [M]
R515	ERDS2TJ223T	22K 1/4W [M]
R516	ERDS2TJ104T	100K 1/4W [M]
R517	ERDS2TJ472T	4.7K 1/4W [M]
R518	ERDS2TJ473T	47K 1/4W [M]
R519	ERDS2TJ153T	15K 1/4W [M]
R521	ERDS2TJ472T	4.7K 1/4W [M]
R522	ERDS2TJ272T	2.7K 1/4W [M]
R523	ERDS2TJ153T	15K 1/4W [M]
R525	ERDS2TJ562T	5.6K 1/4W [M]
R526	ERDS2TJ820T	82 1/4W [M]
R528	ERDS2TJ104T	100K 1/4W [M]
R529	ERDS2TJ2R2T	2.2 1/4W [M]
R530	ERDS2TJ2R2T	2.2 1/4W [M]
R533	ERDS2TJ100T	10 1/4W [M]
R534	ERDS2TJ1R2T	1.2 1/4W [M]
R535	ERDS2TJ1R0T	1 1/4W [M]
R538	ERDS2TJ103T	10K 1/4W [M]
R539	ERDS2TJ272T	2.7K 1/4W [M]
R544	ERDS2TJ822T	8.2K 1/4W [M]
R606	ERDS2TJ472T	4.7K 1/4W [M]
R607	ERDS2TJ223T	22K 1/4W [M]
R608	ERDS2TJ223T	22K 1/4W [M]
R611	ERDS2TJ472T	4.7K 1/4W [M]
R612	ERDS2TJ101T	100 1/4W [M]
R613	ERDS2TJ681T	680 1/4W [M]
R614	ERDS2TJ104T	100K 1/4W [M]
R615	ERDS2TJ334T	330K 1/4W [M]
R616	ERDS2TJ334T	330K 1/4W [M]
R617	ERDS2TJ330T	33 1/4W [M]
R618	ERDS2TJ330T	33 1/4W [M]
R619	ERDS2TJ221T	220 1/4W [M]
R621	ERDS2TJ822T	8.2K 1/4W [M]
R622	ERDS2TJ223T	22K 1/4W [M]
R623	ERDS2TJ103T	10K 1/4W [M]
R624	ERDS2TJ102T	1K 1/4W [M]
R625	ERDS2TJ472T	4.7K 1/4W [M]
R626	ERDS2TJ122T	1.2K 1/4W [M]
R627	ERDS2TJ331T	330 1/4W [M]
R628	ERDS2TJ103T	10K 1/4W [M]
R629	ERDS2TJ331T	330 1/4W [M]
R630	ERDS2TJ681T	680 1/4W [M]
R631	ERDS2TJ103T	10K 1/4W [M]
R632	ERDS2TJ1R2T	1.2 1/4W [M]
R633	ERDS2TJ1R2T	1.2 1/4W [M]
R634	ERDS2TJ1R2T	1.2 1/4W [M]
R635	ERDS2TJ222T	2.2K 1/4W [M]
R636	ERDS2TJ222T	2.2K 1/4W [M]
R637	ERDS2TJ102T	1K 1/4W [M]
R638	ERDS2TJ102T	1K 1/4W [M]
R640	ERDS2TJ223T	22K 1/4W [M]
R641	ERDS2TJ101T	100 1/4W [M]
R642	ERDS2TJ332T	3.3K 1/4W [M]
R643	ERDS2TJ103T	10K 1/4W [M]
R644	ERD2FCVJ8R2T	8.2 1/4W [M]
R645	ERDS1FVJ4R7T⚠	4.7 1/2W [M]
R646	ERDS1FVJ4R7T⚠	4.7 1/2W [M]
R647	ERDS1FVJ4R7T⚠	4.7 1/2W [M]
R648	ERDS2TJ1R2T	1.2 1/4W [M]
R649	ERD2FCVJ8R2T	8.2 1/4W [M]
R650	ERDS2TJ102T	1K 1/4W [M]
R651	ERDS2TJ101T	100 1/4W [M]
R657	ERDS2TJ122T	1.2K 1/4W [M]
R658	ERDS2TJ333T	33K 1/4W [M]
R659	ERDS2TJ472T	4.7K 1/4W [M]
R669	ERDS2TJ333T	33K 1/4W [M]
R672	ERDS2TJ103T	10K 1/4W [M]
R673	ERDS2TJ103T	10K 1/4W [M]
R674	ERDS2TJ271T	270 1/4W [M]
R675	ERDS2TJ103T	10K 1/4W [M]
R679	ERDS2TJ223T	22K 1/4W [M]
R680	ERDS2TJ104T	100K 1/4W [M]
R682	ERDS2TJ472T	4.7K 1/4W [M]
R695	ERDS2TJ222T	2.2K 1/4W [M]
R696	ERDS2TJ103T	10K 1/4W [M]
R697	ERDS2TJ824T	820K 1/4W [M]
R698	ERDS2TJ152T	1.5K 1/4W [M]
R699	ERDS2TJ102T	1K 1/4W [M]
R701	ERJ6GEYJ4R7A	4.7 1/10W [M]
R702	ERJ6GEYJ822A	8.2K 1/10W [M]
R704	ERJ6GEYJ102A	1K 1/10W [M]
R705	ERJ6GEYJ124A	120K 1/10W [M]

Ref No.	Part No.	Values & Remarks
R706	ERJ6GEYJ102A	1K 1/10W [M]
R707	ERJ6GEYJ474A	470K 1/10W [M]
R708	ERJ6GEYJ154A	150K 1/10W [M]
R709	ERJ6GEYJ473A	47K 1/10W [M]
R710	ERJ6GEYJ103A	10K 1/10W [M]
R711	ERJ6GEYJ154A	150K 1/10W [M]
R712	ERJ6GEYJ221A	220 1/10W [M]
R715	ERJ6GEYJ122A	1.2K 1/10W [M]
R717	ERJ6GEYJ102A	1K 1/10W [M]
R718	ERJ6GEYJ102A	1K 1/10W [M]
R719	ERJ6GEYJ102A	1K 1/10W [M]
R720	ERJ6GEYJ102A	1K 1/10W [M]
R721	ERJ6GEYJ101A	100 1/10W [M]
R723	ERJ6GEYJ272A	2.7K 1/10W [M]
R724	ERJ6GEYJ333A	33K 1/10W [M]
R725	ERJ6GEYJ122A	1.2K 1/10W [M]
R727	ERJ6GEYJ682A	6.8K 1/10W [M]
R728	ERJ6GEYJ682A	6.8K 1/10W [M]
R729	ERJ6GEYJ562A	5.6K 1/10W [M]
R731	ERJ6GEYJ123A	12K 1/10W [M]
R734	ERJ6GEYJ101A	100 1/10W [M]
R735	ERJ6GEYJ101A	100 1/10W [M]
R736	ERJ6GEYJ101A	100 1/10W [M]
R738	ERJ6GEYJ223A	22K 1/10W [M]
R741	ERJ6GEYJ562A	5.6K 1/10W [M]
R742	ERJ6GEYJ562A	5.6K 1/10W [M]
R743	ERJ6GEYJ562A	5.6K 1/10W [M]
R744	ERJ6GEYJ104A	100K 1/10W [M]
R745	ERJ6GEYJ155A	1.5M 1/10W [M]
R748	ERJ6GEYJ272A	2.7K 1/10W [M]
R749	ERJ6GEYJ682A	6.8K 1/10W [M]
R752	ERJ8GEYJ220A	22 1/8W [M]
R770	ERJ6GEYJ224A	220K 1/10W [M]
R801	ERDS2TJ102T	1K 1/4W [M]
R802	ERDS2TJ271T	270 1/4W [M]
R803	ERDS2TJ271T	270 1/4W [M]
R804	ERDS2TJ101T	100 1/4W [M]
R805	ERDS2TJR47T	0.47 1/4W [M]
R806	ERDS2TJR47T	0.47 1/4W [M]
R807	ERDS2TJ3R3T	3.3 1/4W [M]
R808	ERDS2TJ102T	1K 1/4W [M]
R809	ERDS2TJ103T	10K 1/4W [M]
R811	ERDS2TJ823T	82K 1/4W [M]
R812	ERDS2TJ823T	82K 1/4W [M]
R813	ERDS2TJ823T	82K 1/4W [M]
R814	ERDS2TJ222T	2.2K 1/4W [M]
R817	ERDS2TJ104T	100K 1/4W [M]
R818	ERDS2TJ153T	15K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R819	ERDS2TJ472T	4.7K 1/4W [M]
R820	ERDS2TJ472T	4.7K 1/4W [M]
R821	ERDS2TJ472T	4.7K 1/4W [M]
R822	ERDS2TJ472T	4.7K 1/4W [M]
R823	ERDS2TJ472T	4.7K 1/4W [M]
R824	ERDS2TJ472T	4.7K 1/4W [M]
R825	ERDS2TJ102T	1K 1/4W [M]
R826	ERDS2TJ103T	10K 1/4W [M]
R827	ERDS2TJ472T	4.7K 1/4W [M]
R828	ERDS2TJ472T	4.7K 1/4W [M]
R829	ERDS2TJ472T	4.7K 1/4W [M]
R830	ERDS2TJ102T	1K 1/4W [M]
R831	ERDS2TJ102T	1K 1/4W [M]
R832	ERD2FCVG220T	22 1/4W [M]
R833	ERDS2TJ106T	10M 1/4W [M]
R834	ERDS2TJ681T	680 1/4W [M]
R835	ERDS2TJ334T	330K 1/4W [M]
R836	ERDS2TJ472T	4.7K 1/4W [M]
R837	ERDS2TJ472T	4.7K 1/4W [M]
R838	ERDS2TJ473T	47K 1/4W [M]
R839	ERDS2TJ473T	47K 1/4W [M]
R840	ERDS2TG103T	10K 1/4W [M]
R841	ERDS2TG103T	10K 1/4W [M]
R842	ERDS2TJ122T	1.2K 1/4W [M]
R843	ERDS2TJ182T	1.8K 1/4W [M]
R844	ERDS2TJ222T	2.2K 1/4W [M]
R845	ERDS2TJ272T	2.7K 1/4W [M]
R846	ERDS2TJ472T	4.7K 1/4W [M]
R847	ERDS2TJ682T	6.8K 1/4W [M]
R848	ERDS2TJ103T	10K 1/4W [M]
R849	ERDS2TJ223T	22K 1/4W [M]
R850	ERDS2TJ683T	68K 1/4W [M]
R851	ERDS2TJ102T	1K 1/4W [M]
R852	ERDS2TJ102T	1K 1/4W [M]
R853	ERDS2TJ102T	1K 1/4W [M]
R854	ERDS2TJ122T	1.2K 1/4W [M]
R855	ERDS2TJ182T	1.8K 1/4W [M]
R856	ERDS2TJ222T	2.2K 1/4W [M]
R857	ERDS2TJ272T	2.7K 1/4W [M]
R858	ERDS2TJ472T	4.7K 1/4W [M]
R859	ERDS2TJ682T	6.8K 1/4W [M]
R860	ERDS2TJ103T	10K 1/4W [M]
R861	ERDS2TJ223T	22K 1/4W [M]
R862	ERDS2TJ683T	68K 1/4W [M]
R863	ERDS2TJ473T	47K 1/4W [M]
R864	ERDS2TJ102T	1K 1/4W [M]
R865	ERDS2TJ102T	1K 1/4W [M]
R866	ERDS2TJ103T	10K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R867	ERDS2TJ152T	1.5K 1/4W [M]
R868	ERDS2TJ105T	1M 1/4W [M]
R869	ERDS2TJ122T	1.2K 1/4W [M]
R870	ERDS2TJ101T	100 1/4W [M]
R871	ERDS2TJ103T	10K 1/4W [M]
R873	ERDS2TJ103T	10K 1/4W [M]
R875	ERDS2TJ103T	10K 1/4W [M]
R877	ERDS2TJ223T	22K 1/4W [M]
R878	ERDS2TJ223T	22K 1/4W [M]
R879	ERDS2TJ104T	100K 1/4W [M]
R880	ERDS2TJ102T	1K 1/4W [M]
R881	ERDS2TJ102T	1K 1/4W [M]
R882	ERDS2TJ103T	10K 1/4W [M]
R883	ERDS2TJ103T	10K 1/4W [M]
R884	ERDS2TJ222T	2.2K 1/4W [M]
R885	ERDS2TJ222T	2.2K 1/4W [M]
R886	ERDS2TJ222T	2.2K 1/4W [M]
R887	ERDS2TJ222T	2.2K 1/4W [M]
R888	ERDS2TJ222T	2.2K 1/4W [M]
R889	ERDS2TJ222T	2.2K 1/4W [M]
R890	ERDS2TJ223T	22K 1/4W [M]
R891	ERDS2TJ103T	10K 1/4W [M]
R892	ERDS2TJ561T	560 1/4W [M]
R893	ERDS2TJ332T	3.3K 1/4W [M]
R894	ERDS2TJ561T	560 1/4W [M]
R895	ERDS2TJ223T	22K 1/4W [M]
R896	ERDS2TJ103T	10K 1/4W [M]
R897	ERDS2TJ561T	560 1/4W [M]
R898	ERDS2TJ332T	3.3K 1/4W [M]
R899	ERDS2TJ561T	560 1/4W [M]
R972	ERDS2TJ821T	820 1/4W [M]
R973	ERDS2TJ393T	39K 1/4W [M]
R1101	ERDS2TJ474T	470K 1/4W [M]
R1102	ERDS2TJ153T	15K 1/4W [M]
R1103	ERDS2TJ560T	56 1/4W [M]
R1104	ERDS2TJ681T	680 1/4W [M]
R1105	ERDS2TJ103T	10K 1/4W [M]
R1107	ERDS2TJ334T	330K 1/4W [M]
R1109	ERDS2TJ273T	27K 1/4W [M]
R1110	ERDS2TJ222T	2.2K 1/4W [M]
R1111	ERDS2TJ392T	3.9K 1/4W [M]
R1112	ERDS2TJ470T	47 1/4W [M]
R1113	ERDS2TJ392T	3.9K 1/4W [M]
R1114	ERDS2TJ472T	4.7K 1/4W [M]
R1115	ERDS2TJ333T	33K 1/4W [M]
R1116	ERDS2TJ152T	1.5K 1/4W [M]
R1201	ERDS2TJ474T	470K 1/4W [M]
R1202	ERDS2TJ153T	15K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R1203	ERDS2TJ560T	56 1/4W [M]
R1204	ERDS2TJ681T	680 1/4W [M]
R1205	ERDS2TJ103T	10K 1/4W [M]
R1207	ERDS2TJ334T	330K 1/4W [M]
R1209	ERDS2TJ273T	27K 1/4W [M]
R1210	ERDS2TJ222T	2.2K 1/4W [M]
R1211	ERDS2TJ392T	3.9K 1/4W [M]
R1212	ERDS2TJ470T	47 1/4W [M]
R1213	ERDS2TJ392T	3.9K 1/4W [M]
R1214	ERDS2TJ472T	4.7K 1/4W [M]
R1215	ERDS2TJ333T	33K 1/4W [M]
R1216	ERDS2TJ152T	1.5K 1/4W [M]
R1301	ERDS2TJ474T	470K 1/4W [M]
R1302	ERDS2TJ104T	100K 1/4W [M]
R1303	ERDS2TJ103T	10K 1/4W [M]
R1304	ERDS2TJ152T	1.5K 1/4W [M]
R1305	ERDS2TJ152T	1.5K 1/4W [M]
R1307	ERDS2TJ153T	15K 1/4W [M]
R1308	ERDS2TJ153T	15K 1/4W [M]
R1309	ERDS2TJ331T	330 1/4W [M]
R1310	ERDS2TJ103T	10K 1/4W [M]
R1311	ERD2FCVJ4R7T	4.7 1/4W [M]
R1312	ERDS2TJ752T	7.5K 1/4W [M]
R1313	ERDS2TJ472T	4.7K 1/4W [M]
R1314	ERDS2TJ153T	15K 1/4W [M]
R1315	ERDS2TJ472T	4.7K 1/4W [M]
R1316	ERDS2TJ470T	47 1/4W [M]
R1317	ERDS2TJ103T	10K 1/4W [M]
R1318	ERDS2TJ682T	6.8K 1/4W [M]
R1319	ERDS2TJ823T	82K 1/4W [M]
R1320	ERDS2TJ103T	10K 1/4W [M]
R1321	ERDS2TJ103T	10K 1/4W [M]
R1322	ERDS2TJ102T	1K 1/4W [M]
R1323	ERDS2TJ393T	39K 1/4W [M]
R1324	ERDS2TJ822T	8.2K 1/4W [M]
R1325	ERDS2TJ562T	5.6K 1/4W [M]
R1326	ERDS2TJ682T	6.8K 1/4W [M]
R1327	ERDS2TJ102T	1K 1/4W [M]
R1328	ERDS2TJ101T	100 1/4W [M]
R1329	ERDS2TJ335T	3.3M 1/4W [M]
R1330	ERDS2TJ823T	82K 1/4W [M]
R1331	ERDS2TJ104T	100K 1/4W [M]
R1332	ERDS2TJ333T	33K 1/4W [M]
R1333	ERDS2TJ472T	4.7K 1/4W [M]
R1334	ERDS2TJ393T	39K 1/4W [M]
R1335	ERDS2TJ682T	6.8K 1/4W [M]
R1336	ERDS2TJ681T	680 1/4W [M]
R1337	ERDS2TJ273T	27K 1/4W [M]

Ref No.	Part No.	Values & Remarks
R1338	ERDS2TJ332T	3.3K 1/4W [M]
R1339	ERDS2TJ473T	47K 1/4W [M]
R1340	ERDS2TJ223T	22K 1/4W [M]
R1342	ERDS2TJ123T	12K 1/4W [M]
R1352	ERDS2TJ473T	47K 1/4W [M]
R1354	ERDS2TJ332T	3.3K 1/4W [M]
R1355	ERDS2TJ222T	2.2K 1/4W [M]
R1391	ERDS2TJ223T	22K 1/4W [M]
R1395	ERDS2TJ103T	10K 1/4W [M]
R1396	ERDS2TJ102T	1K 1/4W [M]
R1397	ERDS2TJ102T	1K 1/4W [M]
R1399	ERDS2TJ102T	1K 1/4W [M]
	CAPACITORS	
C5	ECKR1H103ZF5	0.01 50V [M]
C6	ECA1CM102B	1000 16V [M]
C101	ECBT1C103NS5	0.01 16V [M]
C102	ECEA1CKA101B	100 16V [M]
C103	ECBT1C103NS5	0.01 16V [M]
C104	ECBT1H102KB5	1000P 50V [M]
C105	ECBT1H102KB5	1000P 50V [M]
C106	ECBT1C103NS5	0.01 16V [M]
C107	ECBT1H473ZF5	0.047 50V [M]
C108	ECBT1H8R2KC5	8.2P 50V [M]
C109	ECBT1H102KB5	1000P 50V [M]
C110	ECBT1C103NS5	0.01 16V [M]
C111	ECEA1EKA4R7B	4.7 25V [M]
C112	ECBT1C103NS5	0.01 16V [M]
C113	ECBT1H102KB5	1000P 50V [M]
C114	ECEA1HKA3R3B	3.3 50V [M]
C115	ECEA1EKA4R7B	4.7 25V [M]
C116	ECFR1C333KR	0.033 16V [M]
C117	ECFR1C183KR	0.018 16V [M]
C118	ECFR1C183KR	0.018 16V [M]
C119	ECQP1391JZT	390P 100V [M]
C120	ECEA1CKA100B	10 16V [M]
C121	ECEA1HKAR47B	0.47 50V [M]
C122	ECEA1HKA010B	1 50V [M]
C123	ECEA1HKA010B	1 50V [M]
C124	ECBT1H101KB5	100P 50V [M]
C125	ECEA1EKA220B	22 25V [M]
C126	ECBT1H473ZF5	0.047 50V [M]
C127	ECEA1CKA220B	22 16V [M]
C129	ECEA0JKA101B	100 6.3V [M]
C130	ECEA0JKA101B	100 6.3V [M]
C131	ECBT1H101KB5	100P 50V [M]
C132	ECBT1H102KB5	1000P 50V [M]

Ref No.	Part No.	Values & Remarks
C133	ECBT1H150JC5	15P 50V [M]
C134	ECBT1H180JC5	18P 50V [M]
C136	ECBT1H102KB5	1000P 50V [M]
C137	ECFR1C472KR	4700P 16V [M]
C138	ECBT1C103KS5	0.01 16V [M]
C139	ECFR1C472KR	4700P 16V [M]
C141	ECEA1HKA010B	1 50V [M]
C142	ECEA1HKA010B	1 50V [M]
C143	ECBT1C472KR5	4700P 16V [M]
C144	ECBT1C472KR5	4700P 16V [M]
C147	ECBT1H102KB5	1000P 50V [M]
C148	ECBT1C103NS5	0.01 16V [M]
C149	ECBT1H104ZF5	0.1 50V [M]
C401	ECBT1H101KB5	100P 50V [M]
C402	ECBT1H101KB5	100P 50V [M]
C404	ECEA1CKA100B	10 16V [M]
C406	ECBT1H221KB5	220P 50V [M]
C407	ECEA1EKA470B	47 25V [M]
C408	ECBT1H221KB5	220P 50V [M]
C409	ECFR1C104KR	0.1 16V [M]
C410	ECFR1C104KR	0.1 16V [M]
C411	ECFR1C223MR	0.022 16V [M]
C412	ECBT1H101KB5	100P 50V [M]
C413	ECQV1H154JM3	0.15 50V [M]
C414	ECQV1H154JM3	0.15 50V [M]
C415	ECBT1H471KB5	470P 50V [M]
C416	ECQV1H154JM3	0.15 50V [M]
C423	ECEA1CKA100B	10 16V [M]
C424	ECBT1H471KB5	470P 50V [M]
C425	ECA1CM471B	470 16V [M]
C427	ECEA1AKA221Q	220 10V [M]
C428	ECBT1H473ZF5	0.047 50V [M]
C429	ECBT1H473ZF5	0.047 50V [M]
C430	ECEA1HKA2R2B	2.2 50V [M]
C431	ECBT1H471KB5	470P 50V [M]
C432	ECFR1E104MR	0.1 25V [M]
C433	ECFR1E104MR	0.1 25V [M]
C435	ECBT1H473ZF5	0.047 50V [M]
C437	ECEA1CKA101B	100 16V [M]
C438	ECEA1CKA101B	100 16V [M]
C439	ECQV1H224JZ3	0.22 50V [M]
C440	ECBT1C182KR5	1800P 16V [M]
C444	ECFR1C183KR	0.018 16V [M]
C501	ECBT1H101KB5	100P 50V [M]
C502	ECBT1H101KB5	100P 50V [M]
C504	ECEA1CKA100B	10 16V [M]
C506	ECBT1H221KB5	220P 50V [M]
C508	ECBT1H221KB5	220P 50V [M]

Ref No.	Part No.	Values & Remarks
C509	ECFR1C104KR	0.1 16V [M]
C510	ECFR1C104KR	0.1 16V [M]
C511	ECFR1C223MR	0.022 16V [M]
C512	ECBT1H101KB5	100P 50V [M]
C513	ECQV1H154JM3	0.15 50V [M]
C514	ECQV1H154JM3	0.15 50V [M]
C515	ECBT1H471KB5	470P 50V [M]
C516	ECQV1H154JM3	0.15 50V [M]
C518	ECQV1H154JM3	0.15 50V [M]
C519	ECFR1C473MR	0.047 16V [M]
C520	ECBT1H471KB5	470P 50V [M]
C521	ECEA1CKA100B	10 16V [M]
C522	ECQV1H334JZ3	0.33 50V [M]
C523	ECEA1CKA100B	10 16V [M]
C524	ECBT1H471KB5	470P 50V [M]
C525	ECA1CM471B	470 16V [M]
C527	ECEA1AKA221Q	220 10V [M]
C528	ECBT1H473ZF5	0.047 50V [M]
C529	ECBT1H473ZF5	0.047 50V [M]
C530	ECEA1HKA2R2B	2.2 50V [M]
C531	ECBT1H471KB5	470P 50V [M]
C532	ECFR1E104MR	0.1 25V [M]
C533	ECFR1E104MR	0.1 25V [M]
C535	ECBT1H473ZF5	0.047 50V [M]
C537	ECEA1CKA101B	100 16V [M]
C538	ECEA1CKA101B	100 16V [M]
C539	ECQV1H224JZ3	0.22 50V [M]
C540	ECBT1C182KR5	1800P 16V [M]
C544	ECFR1C183KR	0.018 16V [M]
C605	ECEA1CKA100B	10 16V [M]
C606	ECEA1CKA100B	10 16V [M]
C607	ECFR1C473MR	0.047 16V [M]
C608	ECEA1HKA010B	1 50V [M]
C609	ECEA1HKA010B	1 50V [M]
C610	ECEA1HKA010B	1 50V [M]
C611	ECA1CM101B	100 16V [M]
C613	ECA1CM471B	470 16V [M]
C615	ECEA1AKA220B	22 10V [M]
C616	ECA1EM331B	330 25V [M]
C617	ECEA1AKA220B	22 10V [M]
C618	ECA1EM331B	330 25V [M]
C619	ECEA1HKA010B	1 50V [M]
C620	ECEA1CKA101B	100 16V [M]
C621	ECEA1CKA330B	33 16V [M]
C622	ECEA1HKA010B	1 50V [M]
C624	ECEA1CKA100B	10 16V [M]
C625	ECEA1CKA100B	10 16V [M]
C626	ECEA1EKA470B	47 25V [M]

Ref No.	Part No.	Values & Remarks
C627	ECBT1C103MS5	0.01 16V [M]
C628	ECA1EAM682XE ⚠	6800 25V [M]
C630	ECEA1HKA010B	1 50V [M]
C631	ECA1HM221B	220 50V [M]
C632	ECA1HM221B	220 50V [M]
C633	ECBT1C103MS5	0.01 16V [M]
C634	ECEA1AKA221Q	220 10V [M]
C635	ECBT1H102KB5	1000P 50V [M]
C636	ECBT1H330J5	33P 50V [M]
C637	ECBT1H102KB5	1000P 50V [M]
C638	ECBT1H102KB5	1000P 50V [M]
C642	ECBT1H101KB5	100P 50V [M]
C643	ECBT1H101KB5	100P 50V [M]
C644	ECBT1H471KB5	470P 50V [M]
C645	ECA1AM471B	470 10V [M]
C646	ECBT1H102KB5	1000P 50V [M]
C647	ECBT1H221KB5	220P 50V [M]
C650	ECKR1H103ZF5	0.01 50V [M]
C696	ECBT1C103MS5	0.01 16V [M]
C697	ECA1CM101B	100 16V [M]
C698	ECBT1H102KB5	1000P 50V [M]
C701	ECEA0JKA330I	33 6.3V [M]
C702	ECUZ1E104MBN	0.1 25V [M]
C703	ECEA0JKA101I	100 6.3V [M]
C704	ECUZ1E104MBN	0.1 25V [M]
C706	ECUZ1H272KBN	2700P 50V [M]
C707	ECUZ1E273KBN	0.027 25V [M]
C710	ECUV1H151KCN	150P 50V [M]
C711	ECUZ1E104ZFN	0.1 25V [M]
C712	ECUZ1E104ZFN	0.1 25V [M]
C713	ECUZ1E104MBN	0.1 25V [M]
C714	ECEA0JKA101I	100 6.3V [M]
C715	ECUZ1H182KBN	1800P 50V [M]
C716	ECUZ1H821KBN	820P 50V [M]
C717	ECUZ1E104ZFN	0.1 25V [M]
C718	ECUZ1C224KBN	0.22 16V [M]
C721	ECUZ1H150JCN	15P 50V [M]
C722	ECUZ1H150JCN	15P 50V [M]
C723	ECEA1AKA221I	220 10V [M]
C724	ECUZ1E104MBN	0.1 25V [M]
C725	ECUZ1H102KBN	1000P 50V [M]
C726	ECUZ1H102KBN	1000P 50V [M]
C727	ECA1HAK010XI	1 50V [M]
C728	ECA1HAK010XI	1 50V [M]
C730	ECUZ1E104ZFN	0.1 25V [M]
C731	ECEA0JKA221I	220 6.3V [M]
C732	ECEA0JKA221I	220 6.3V [M]
C733	ECUZ1E104MBN	0.1 25V [M]

Ref No.	Part No.	Values & Remarks
C734	ECEA1AKA221I	220 10V [M]
C735	ECUZ1E104ZFN	0.1 25V [M]
C736	ECUZ1E104ZFN	0.1 25V [M]
C737	ECUZ1E104ZFN	0.1 25V [M]
C738	ECUZ1E104MBN	0.1 25V [M]
C739	ECUZ1H103KBN	0.01 50V [M]
C742	ECUZ1E273KBN	0.027 25V [M]
C743	ECUZ1E104ZFN	0.1 25V [M]
C744	ECUZ1E123KBN	0.012 25V [M]
C745	ECUZ1C473KBN	0.047 16V [M]
C747	ECUV1H221KBN	220P 50V [M]
C749	ECUZ1H222KBN	2200P 50V [M]
C750	ECUZ1E104MBN	0.1 25V [M]
C751	ECUZ1E104MBN	0.1 25V [M]
C752	ECUZ1H102KBN	1000P 50V [M]
C753	ECUZ1H471KBM	470P 50V [M]
C754	ECUZ1H471KBN	470P 50V [M]
C761	ECUZ1H471KBN	470P 50V [M]
C762	ECUZ1H471KBN	470P 50V [M]
C790	ECA1AKF820E	82 10V [M]
C801	ECBT1H102KB5	1000P 50V [M]
C806	ECA0JM102B ⚠	1000 6.3V [M]
C809	ECEA0JKA470B	47 6.3V [M]
C810	ECBT1H561KB5	560P 50V [M]
C811	ECBT1H561KB5	560P 50V [M]
C812	ECBT1H561KB5	560P 50V [M]
C813	ECBT1H561KB5	560P 50V [M]
C814	ECBT1H561KB5	560P 50V [M]
C815	ECBT1H561KB5	560P 50V [M]
C816	ECBT1H561KB5	560P 50V [M]
C817	ECBT1H561KB5	560P 50V [M]
C818	ECBT1H101KB5	100P 50V [M]
C819	ECBT1C103MS5	0.01 16V [M]
C820	ECBT1H180JC5	18P 50V [M]
C821	ECBT1H180JC5	18P 50V [M]
C822	ECBT1H680J5	68P 50V [M]
C823	ECBT1H680J5	68P 50V [M]
C824	ECBT1H680J5	68P 50V [M]
C825	ECBT1H680J5	68P 50V [M]
C826	ECBT1H102KB5	1000P 50V [M]
C827	ECBT1H102KB5	1000P 50V [M]
C828	ECBT1H101KB5	100P 50V [M]
C829	ECBT1H101KB5	100P 50V [M]
C830	ECBT1H101KB5	100P 50V [M]
C831	ECEA1HKA010B	1 50V [M]
C832	ECEA1HKA010B	1 50V [M]
C833	ECBT1C103MS5	0.01 16V [M]
C836	ECA1AM331B	330 10V [M]

Ref No.	Part No.	Values & Remarks
C838	ECBT1H221KB5	220P 50V [M]
C839	ECBT1H221KB5	220P 50V [M]
C840	ECBT1H221KB5	220P 50V [M]
C842	ECBT1C103MS5	0.01 16V [M]
C843	ECEA1AKA470B	47 10V [M]
C844	ECA1CM221B	220 16V [M]
C899	ECEA0JKA470B	47 6.3V [M]
C901	ECKR1H103ZF5	0.01 50V [M]
C902	ECKR1H103ZF5	0.01 50V [M]
C903	ECKR1H103ZF5	0.01 50V [M]
C904	ECKR1H103ZF5	0.01 50V [M]
C905	ECQE2104KF3	0.1 250V [M]
C1102	ECBT1C152MR5	1500P 16V [M]
C1103	ECEA0JKA470B	47 6.3V [M]
C1104	ECBT1H331KB5	330P 50V [M]
C1105	ECFR1C153KR	0.015 16V [M]
C1106	ECEA1EKA4R7B	4.7 25V [M]
C1107	ECEA1HKA010B	1 50V [M]
C1108	ECEA0JKA470B	47 6.3V [M]
C1111	ECEA1EKA4R7B	4.7 25V [M]
C1112	ECBT1H102KB5	1000P 50V [M]
C1113	ECBT1H102KB5	1000P 50V [M]
C1114	ECBT1H102KB5	1000P 50V [M]
C1115	ECBT1H101KB5	100P 50V [M]
C1202	ECBT1C152MR5	1500P 16V [M]
C1203	ECEA0JKA470B	47 6.3V [M]
C1204	ECBT1H331KB5	330P 50V [M]
C1205	ECFR1C153KR	0.015 16V [M]
C1206	ECEA1EKA4R7B	4.7 25V [M]
C1207	ECEA1HKA010B	1 50V [M]
C1208	ECEA0JKA470B	47 6.3V [M]
C1211	ECEA1EKA4R7B	4.7 25V [M]
C1212	ECBT1H102KB5	1000P 50V [M]
C1213	ECBT1H102KB5	1000P 50V [M]
C1214	ECBT1H102KB5	1000P 50V [M]
C1215	ECBT1H101KB5	100P 50V [M]
C1301	ECEA1HN010SB	1 50V [M]
C1303	ECBT1C103MS5	0.01 16V [M]
C1305	ECQP2A102JZT	1000P 100V [M]
C1306	ECQP2A472JZT	4700P 100V [M]
C1307	ECEA1HKA010B	1 50V [M]
C1308	ECA1CM101B	100 16V [M]
C1309	ECQV1H473JZ3	0.047 50V [M]
C1310	ECBT1H102KB5	1000P 50V [M]
C1311	ECBT1H102KB5	1000P 50V [M]
C1312	ECBT1C222MR5	2200P 16V [M]
C1313	ECBT1C222MR5	2200P 16V [M]
C1314	ECBT1C332MR5	3300P 16V [M]

Ref No.	Part No.	Values & Remarks
C1315	ECEA1CKA100B	10 16V [M]
C1316	ECFR1C104KR	0.1 16V [M]
C1317	ECBT1H470J5	47P 50V [M]
C1318	ECEA1HKA3R3B	3.3 50V [M]
C1319	ECEA1AKA221Q	220 10V [M]
C1320	ECEA1AKA220B	22 10V [M]
C1321	ECEA1AKA220B	22 10V [M]
C1322	ECEA0JKA470B	47 6.3V [M]
C1323	ECBT1C103MS5	0.01 16V [M]
C1324	ECBT1C472MR5	4700P 16V [M]
C1326	ECEA1CKA100B	10 16V [M]
	CHIP JUMPER	
RJ701	ERJ6GEY0R00A	0 1/10W [M]
RJ702	ERJ8GEY0R00A	0 1/8W [M]
RJ703	ERJ8GEY0R00A	0 1/8W [M]
RJ704	ERJ8GEY0R00A	0 1/8W [M]
RJ705	ERJ8GEY0R00A	0 1/8W [M]
RJ706	ERJ8GEY0R00A	0 1/8W [M]
RJ707	ERJ8GEY0R00A	0 1/8W [M]
RJ708	ERJ8GEY0R00A	0 1/8W [M]
RJ709	ERJ8GEY0R00A	0 1/8W [M]
RJ710	ERJ8GEY0R00A	0 1/8W [M]
RJ721	ERJ6GEY0R00A	0 1/10W [M]
RJ722	ERJ6GEY0R00A	0 1/10W [M]
RJ723	ERJ6GEY0R00A	0 1/10W [M]
RJ724	ERJ6GEY0R00A	0 1/10W [M]
RJ725	ERJ6GEY0R00A	0 1/10W [M]
RJ726	ERJ6GEY0R00A	0 1/10W [M]
RJ727	ERJ6GEY0R00A	0 1/10W [M]
RJ728	ERJ6GEY0R00A	0 1/10W [M]
RJ750	ERJ6GEY0R00A	0 1/10W [M]
	TEST JUMPER	
TJ701	EYF8CU	TEST JUMPER [M]

Ref No.	Part No.	Values & Remarks

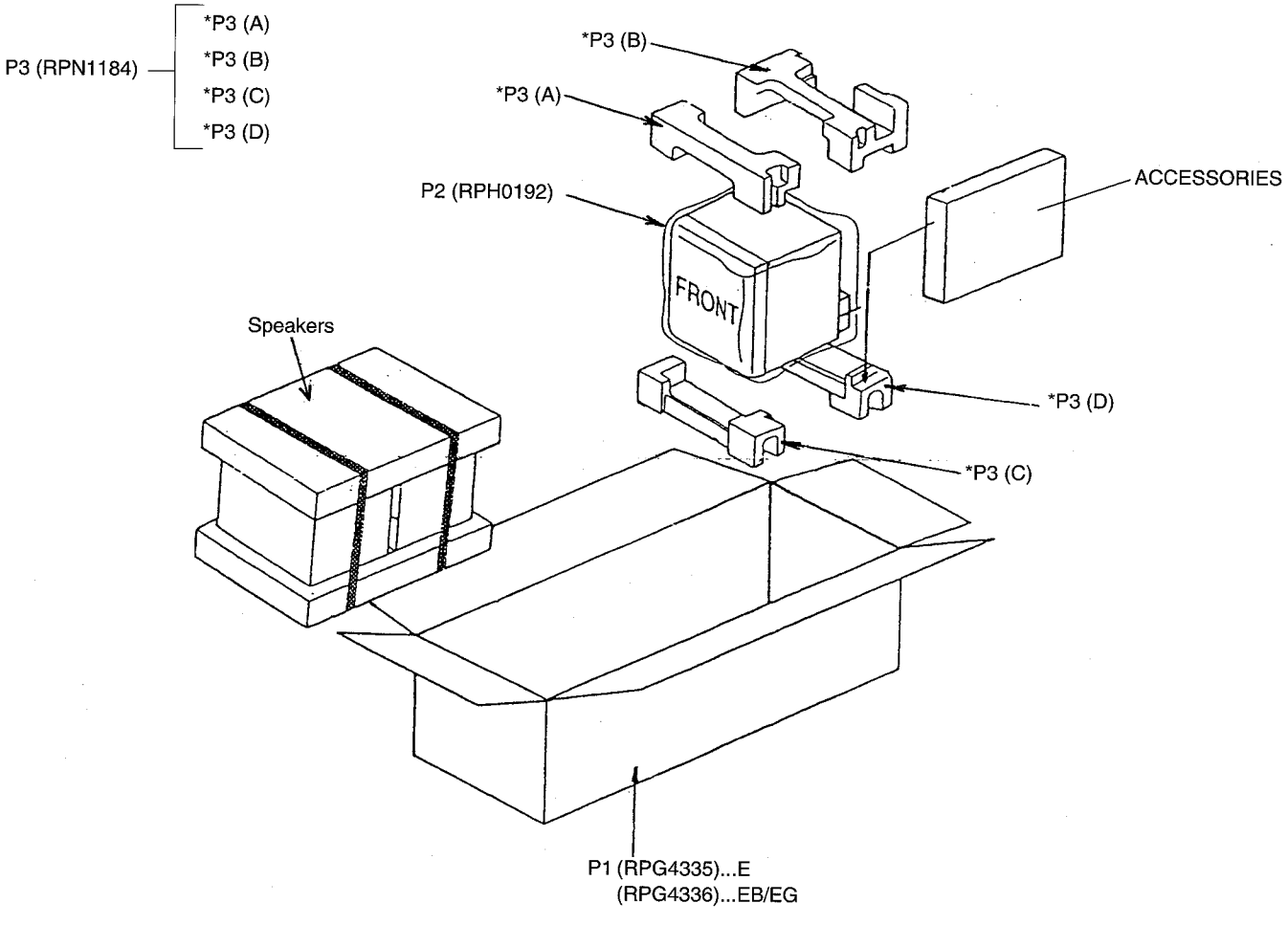
■ Packing Materials & Accessories

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list .
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area)
Parts without these indications can be used for all areas.
* The "(SF)" mark denotes the standard part.
* [M] indicates in the Remarks columns indicates parts supplied by **MESA.**
* Remote Control Unit : Supply period for three years from terminal of production.
* Reference for O/I book languages are as follows :

Ar : Arabic Cf : Canadian French Ch : Chinese Cz : Czech Da : Danish
Du : Dutch En : English Fr : French Ge : German It : Italian
Ko : Korean Po : Polish Ru : Russian Sp : Spanish Sw : Swedish

Ref No.	Part No.	Part Name & Description	Remarks
		ACCESSORIES	
A1	EUR644862	REMOTE CONTROL	[M]
A1-1	UR64EC1822R	R/C BATTERY COVER	[M]
A2	RJA0019-2K	AC CORD (SF) ⚠	[M]EG E
A2	VJA0733	AC CORD (SF) ⚠	[M]EB
A3	RQT4881-D	O/I BOOK (Ge/It/Fr)	[M]EG
A3	RQT4882-H	O/I BOOK (Du/Da)	[M]EG
A3	RQT4883-E	O/I BOOK (En/Sp/Sw)	[M]E
A3	RQT4884-R	O/I BOOK (Ru/Cz/Po)	[M]E
A3	RQT4885-B	O/I BOOK (En)	[M]EB
A4	RSA0007	FM ANTENNA	[M]
A5	RSA0022	AM LOOP ANT	[M]
A6	SJP9009	ANT ADAPTER	[M]EB
		PACKING MATERIALS	
P1	RPG4335	PACKING CASE	[M]E
P1	RPG4336	PACKING CASE	[M]EB EG
P2	RPH0192	PROTECT SHEET	[M]
P3	RPN1184	POLYFOAM	[M]

■ Packaging



MESA Printed in Singapore
P990102600P/F/M/S/J/PRT

10059

Order No. MD0010174P0

Parts Change Notice

Model No. SA-PM01/03/20/22 all series

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein.
If new part numbers are shown, be sure to use then ordering parts.

Reason for Change

*The "▲" item indicates the reason. If no marking, see the Notes in the bottom column.

	1. Improve performance	
	2. Change of material or dimension	
	3. To meel approved specification	
	4. Standardization	
	5. Addition	
	6. Deletion	
▲	7. Correction	
	8. Other	

Interchangeability Code

**The "▲" item indicates the interchangeability. If no marking, see the Notes in the bottom column.

	Parts		Set Production	
	A	Original	Early	Original or new parts may be used in early or late production set.
		New	Late	Use original parts until exhausted, then stock new parts.
	B	Original	Early	Original parts may be used in early production sets only. New parts may be used in early
		New	Late	or late production sets. Use original parts where possible, then stock new parts.
▲	C	Original	Early	New parts only may be used in early or late production sets.
		New	Late	Stock new parts.
	D	Original	Early	Original parts may be used in early production sets only. New parts may be used in late
		New	Late	production sets only. Stock both original and new parts.
	E	Other		

Part Number

Model No.	Ref. No.	Original Part No.	New Part No.	Notes	Part Name & Descriptions
SA-PM01/03/20/22 all series	IC702	MN662746RPK1 [M]	MN662746RPKL [M]	7,C	IC LSI

Please note that the T.I. No. is 20676 (For Factory Reference only).

File this Parts Change Notice with your copy of Service Manuals.

Panasonic®

© 2000 Matsushita Electronics (S) Pte Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

Printed in Singapore M001001300H